Occupational well-being among Danish Child Protection Workers

Prevalence, Predictors and Prevention of Secondary Traumatisation and Burnout

Volume 1 of 1

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Submitted to the Faculty of Life and Health Sciences of Ulster University for the degree of Ph.D. in Psychology

February 2020

I confirm that the total word count of this thesis is less than 100,000 words excluding the title page, contents, acknowledgements, abstract, abbreviations, tables, figures, appendices, and references.

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Abbreviations

AIC – Akaike Information Criterion

BIC – Bayesian Information Criterion

CCI – Children Centre Inventory

CFA – Confirmatory Factor Analysis

CFI – Comparative Fit Index

COPSOQ – Copenhagen Psychosocial Questionnaire

CSFST – Compassion Satisfaction and Fatigue Self-Test

CPTSD – Complex Posttraumatic Stress Disorder

EFA – Exploratory Factor Analysis

ESEM – Exploratory Structural Equation Model

GAD7 – Generalised Anxiety Disorder questionnaire – 7

ITQ – International Trauma Questionnaire

LCA – Latent Class Analysis

MLR – Robust maximum likelihood

OLBI – Oldenburg Burnout Inventory

PHQ9 – Patient Health Questionnaire - 9

ProQoL – Professional Quality of Life Scale

PTSD – Posttraumatic Stress Disorder

TABS – Trauma and Attachment Belief Scale

TLI – Tucker-Lewis Index

RMSEA – Root Mean Square Error of Approximation

SRMR – Standardized Root Mean Square Residual

ssaBIC – sample size adjusted Bayesian Information Criterion

STSE – Secondary Trauma Self-Efficacy

WHO-5 – WHO-5 Well-being scale

WHODAS – WHO Disability Assessment Schedule

Acknowledgements

This Ph.D. project was made possible through the efforts of many people to whom I owe my thanks. Firstly, the work presented in this thesis was dependent on the favour of child protection workers across Denmark, and for your contributions I am genuinely thankful.

The present study was commissioned by the Danish Children Centres, jointly hosted by Ulster University and the Danish Children Centres, Region Southern Denmark, supported by University of Southern Denmark and funded by the European Union's Horizon 2020 Research and Innovation Programme, Marie Skłodowska-Curie Actions as part of the Innovative Training Network CONTEXT (Collaborative Network for Training and Excellence in Psychotraumatology, Grant Agreement No. 722523, www.psychotraumanetwork.com).

I am most grateful for the generous funding, the unique opportunities for personal and professional development and the support that I have received from everyone as part of the CONTEXT programme.

The work presented in this thesis has been jointly facilitated by an international supervisory committee consisting of primary supervisor Prof. Mark Shevlin, Ulster University, Leader-team Ditte Askerod and Lane Lund, The Danish Children Centres, Region Southern Denmark, Dr. Maj Hansen, University of Southern Denmark and Dr. Rikke Holm Bramsen. I owe my sincerest gratitude to all of you for welcoming me into this project and for allowing and supporting me in making it my own. Thank you for your support of my professional development and for helping me to deliver the very best work that I have been capable of.

To Mark, thank you for your genuine interest and support of me and my work through the past three years. You have provided me with seemingly endless encouragement and guidance that have greatly helped me in finding my way through the past three years. You have delivered this with characteristic wit, warmth, and wisdom, and your support as well as your respect for my ways has been invaluable. I am deeply thankful to have enjoyed your generosity with your time, knowledge and network to help me learn, and your conduct will continue to be a great inspiration to me. Thank you very much indeed!

To the Children Centres, thank you for braving the self-reflection required to host a project of this nature and for the extraordinary support and interest that you have all shown me through the course of it. Your conscientiousness and enthusiasm have been a source of energy and inspiration from the beginning. I particularly wish to thank the Children Centre, Region Southern Denmark, where I have been welcomed in a way that exceeds all expectations, and I wish to thank Lane for your warm support and supervision, encouraging curiosity, and plainly good company.

I owe thanks to the Danish National Centre for Psychotraumatology and my colleagues at the Department of Psychology, University of Southern Denmark, for providing me with an inspiring and supportive environment for developing my academic abilities. In particular, I wish to thank professor Ask Elklit and Dr. Jesper Pihl-Thingvad. To Ask, thank you for introducing me to psychotraumatology, for seeing and helping me develop my potential as a researcher and for your inspiring and caring support that I have always been able to rely on. To Jesper, thank you for sharing your expertise and enthusiasm for this area of research. Your generosity has greatly improved the quality of my work and my time while doing it. I also wish to thank Ida Haahr-Pedersen for our stimulating discussions and your inspiring company during our writing retreats where important parts of this thesis came together.

I am beyond grateful for the endless support that I have received from my beloved family, partner, and friends through this process. To my family, thank you for cheering me on and for always nourishing my curiosity, and to Thomas, thank you for being my rock and for your patience and inexhaustible loving support and encouragement. Although unreferenced, your importance for this piece of work is profound.

Finally, I wish to extent my sincere gratitude to the anonymous peer-reviewers that have voluntarily and selflessly helped me improve upon the quality of my published work, and to Professor Gary Adamson, Professor Gary O'Reilly and Dr. Karen Kirby who have agreed to assess my work. I much look forward to discussing it with you.

Maria Louison Vang
Odense, 2020

Abstract

International research has documented that child protection workers are at risk for secondary traumatisation and burnout due to their occupational duties and conditions. However, existing knowledge is limited in multiple ways. The relationship between secondary traumatisation and burnout is insufficiently understood, methods of identifying clinically relevant levels of burnout and secondary traumatisation are lacking, and knowledge on the prevalence of these syndromes among Danish child protection workers as well as evidence-based strategies for prevention in the context of Danish child protection work is scarce. The aim of this thesis is to estimate the prevalence and relationship of burnout and secondary traumatisation among Danish child protection workers, to assess the relationship between the syndromes and individual, operational and organisational factors, and to provide recommendations to prevent the development of burnout and secondary traumatisation in the context of the Danish Children Centres. This aim was addressed through a nation-wide survey of Danish child protection workers (N=667) and data was analysed using structural equation modelling. Chapter 2 systematically reviews existing evidence for the relationship between individual, operational and organisational factors and both syndromes. Chapter 4 investigates the conceptual and empirical relationship between burnout and secondary traumatisation among Danish Child protection workers. Chapter 5 describes the development of a classification method for identifying participants at risk for clinically significant levels of secondary traumatisation and burnout. Chapter 6 investigates the relationship between at-risk status and individual, operational and organisational factors, and Chapter 7 discusses results from the thesis considering existing knowledge to provide recommendations for prevention. Burnout and secondary traumatisation were distinct phenomena among Danish child protection workers that were at higher risk for burnout (18.3 %) than secondary traumatisation (4 %). Individual, operational and organisational factors predicted both syndromes and differentiated efforts are required to adequately prevent the risk of either outcome.

Chapter 1:
Introduction

Content

1.1. Introduction

This thesis reports findings from a study of secondary traumatisation and burnout among Danish child protection workers commenced in March 2017 and concluded in February 2020. The present study is the first to investigate the incidence of secondary traumatisation in Danish child protection workers, and its' overall aim is to aid the Danish Children Centres in supporting the occupational wellbeing of their employees, ensuring their ability to provide specialized psychosocial services to child survivors of violence and sexual abuse. To meet this purpose, this study had three objectives. First, it aimed to map the extent and severity of work-related distress by assessing the prevalence of secondary traumatisation and burnout among Danish child protection workers. Second, it aimed to further existing knowledge of the role of personal, organisational and operational factors in the development of these syndromes among Danish child protection workers. This is done by examining risk- and protective factors among employees in the Danish child protection system through the methods of online surveying and structural equation modelling. Based on these findings, the third objective was to provide recommendations for preventing the development of burnout and secondary traumatisation in the context of the Danish Children Centres. The present chapter will present a scoping of the problem followed by theoretical perspectives on occupational well-being in child protection work before proceeding to an overview of the empirical work addressing the objectives of the study.

1.2. Scoping the problem and its' context

Advances in knowledge of the adverse effects of child abuse has been followed by increased political focus on discovering, assessing and intervening in cases of physical and sexual abuse of children. Consequently, knowledge of

psychological traumatisation and child abuse have increasingly been translated into trauma-informed organisations and interventions that are gradually implemented across human service sectors. The Danish Children Centres, modelled after the Scandinavian 'Barnahus'-concept (Søbjerg, 2017), represent one such organization that is specialised in assessing the acute impact of physical and sexual abuse of children. Due to high demand, the Danish Children Centers have undergone a rapid growth in caseload and number of employees since their founding in 2013. Similarly, due to the high effectiveness of the organisational concept, organisations inspired by the 'Barnahus'-concept for handling cases of suspected child abuse is now widespread both within and outside of Europe (Connell, 2009; Søbjerg, 2017).

The increased specialization in societal responses to suspicions of child abuse ensures that children receive the best available care. However, it also increases the indirect exposure to trauma and adversity experienced by provisioners of these services, which might carry detrimental consequences for employees' well-being (Hensel, Finney, Ruiz & Dewa, 2015). An inherent part of child protection work is to confront the atrocities of which human beings are capable. Often, reality surpasses imagination, and when confronted with the cruelty of neglect and abuse suffered by children, it takes no effort to be shocked, disgusted or disillusioned. The life-stories confronted has the potential to stir fundamental assumptions about the world, and they confront us with dark sides of human nature that we would rather avoid. The highly traumatising potential of being subjected to child abuse is beyond questioning (Brewin et al., 2017; Murphy, Shevlin, Armour, Elklit & Christoffersen, 2014; Schouwenaars, Murpy & Elklit, 2016), and the need for immediate and often long-term support for the victims of abuse is well documented (Elklit, 2016; Fletcher, Armour & Elklit, 2017). To meet this need, experienced and specialised employees

that are willing and able to establish a trusting relationship to the child, to understand the significance of the experience to the child, and to help the child process the traumatic experiences are pivotal. Providing this type of support to child victims of abuse puts two basic demands at child protection workers: First, it demands that they see the child's needs and experiences, and that they make an effort in trying to understand how they feel and make sense of their world. In coming face to face with children (Winnicott, 1977 in Kanter, 2018), we are required to witness their life-circumstances and to relate to the children in the painful emotional states that these circumstances put them in.

The second demand follows from the first. Recognizing children's needs and troublesome life-circumstances can be personally overwhelming. Children attended to by child protection services often have not had their basic needs for love and affection, proper nutrition and relevant social interactions and education met, and often, they have suffered horrifying experiences. The needs of the child in circumstances such as these greatly surpass the abilities and mandate of the individual child protection worker, and this contains the germ for feelings of incompetence, insufficiency and despair. Child protection work demands of the worker that they can recognize the impact of the work and the children on themselves and that they are able to bear this impact while still fulfilling their professional task of helping the child. In the words of Clare Winnicott: "*To work effectively with children, the first and most fundamental thing we have to know about is the strength of our own feelings about the suffering of children. All adults find this a difficult proposition, and we are familiar enough with the ways in which other people deny or minimize the reality of the child's feelings. But we too are only human, and we shall find that our own tolerance level will fluctuate*." (in Kanter,

2018, chapter 7). It is the reactions of professionals to the suffering of traumatised children and adults that has gained increasing attention throughout the past three decades under terms such as secondary traumatisation (Figley, 1995), vicarious traumatisation (McCann & Pearlman, 1990) and compassion fatigue (Stamm, 2010).

In addition to the life-stories confronted in child protection work, the work itself is often performed under suboptimal circumstances due to the restrictions that follow from being governmentally funded, making limited resources, budget cuts and frequent reorganization fundamental conditions of work. High caseloads and varying levels of experience demands of child protection workers that they deal with complex cases in little time, with limited resources and varying control over their working conditions, as well as varying levels of surveillance and quality control. Turnover rates in child protection work are often high, and the average length of work-life among child protection workers has been estimated at approximately three years compared to nurses 15 years and doctors' 25 years (Baginsky et al., 2013; Curtis et al., 2010), suggesting that while there is a need for experienced and highly specialised employees working with survivors of trauma, there is an acute challenge in retaining these professionals. This challenge has been linked to low job satisfaction (Barak, Levin, Nissly & Lane, 2006) as well as work-related burnout (Drake & Yadama, 1996) that are among the most frequently cited reasons for turnover. Organisational characteristics such as exceedingly high demands on workers, limited influence and low instrumental and emotional support are consistently linked to increased risk of burnout as described in the demand-control-support model of job stress (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Karasek & Theorell, 1990), as have role-strain (Harrison, 1980) for child protection workers. As such, threats to child protection workers occupational well-being are

related both to the content and conditions of work, and building an organisational culture and structure around child protection work that mitigates employee burnout is an important concern to any child protection system that aim to work effectively with the needs of traumatised children.

Working with child survivors of trauma within the public sector requires a high level of human functioning, emotional balance and interpersonal skills in addition to specialised training and experience. However, despite the demands and gravity of the work, other perspectives from research suggest that child protection workers to a large extent are content with their jobs. Research under concepts such as compassion satisfaction (Stamm, 2002), vicarious post-traumatic growth (Arnold, Calhoun, Tedeschi & Cann, 2005) and work-engagement (Maslach & Leiter, 1997) has shown that child protection workers are mostly satisfied with their job, and that they find it highly meaningful (Stalker, Mandell, Frensch, Harvey & Wright, 2007; Truter, Fouché & Theron, 2016). When investigated in quantitative studies, resilience against the potential corrosive effect of the content and conditions of child protection work is the norm rather than failure to thrive with the majority of respondents reporting little to no symptoms of work-related distress (Elwood et al., 2011; Russ, Lonne & Darlington, 2009; Stalker et al., 2007; Truter, Fouché & Theron, 2016). However, a review by Stalker and colleagues (2007) highlighted an apparent contradiction among child protection workers where a significant minority reported being both highly emotionally exhausted and highly satisfied with their job. Finding reward in helping others, being personally committed to child welfare and believing that one's labour makes a difference all contribute to satisfaction and meaningfulness in child protection work, despite high interpersonal and organizational demands that is associated with personal costs such as extensive

emotional exhaustion (Stalker et al., 2007). This proposition appears to be supported by results from a large-scale longitudinal study of burnout among Danish human service workers finding that higher levels of meaningfulness predicts higher levels of burnout, even after controlling for baseline levels (Borritz, Rugulies, Christensen, Villadsen & Kristensen, 2005). Hence, the high meaningfulness and associated dedication to human service work as well as the horrific events and life-circumstances dealt with as part of this job requires employees and supervisors alike to strike a delicate balance in managing the emotionally intense content and organizational context of work to support employees in performing their dedication at a minimum personal costs to the professionals.

There is by now a relatively long tradition for research into the effects of human service work on the employees under concepts such as burnout (Freudenberger 1975; Maslach, 1976), secondary traumatisation (Figley, 1995; Stamm, 2005), vicarious traumatisation (McCann & Pearlman, 1990), and compassion fatigue (Figley, 1995), all of which has been linked to child protection work (Cornille & Meyers, 1999; Jankoski, 2010; Sprang, Craig & Clark, 2011). Specifically, international studies have found that up to 62 % of child-protection workers report high levels of emotional exhaustion, a core dimension of burnout (Anderson, 2000), and up to 37 % report symptoms of secondary traumatic stress from working with child victims of trauma (Cornille & Meyers, 1999). Additionally, comparative analyses suggest that child protection workers may be at higher risk for secondary traumatisation and burnout than professionals working with other recipients of care (Sprang, Craig & Clark, 2011). While studies on these syndromes among child protection workers in Denmark are scarce, reports from Scandinavia indicate that mental healthcare provisioners report some of the highest levels of

occupational stress and sickness-absence rates (Isdal, 2017; NFA, 2013), suggesting that there is a pressing the need for organisations specialised in providing services to trauma-survivors to initiate preventive efforts against the potentially corrosive effects of their core-task. Burnout among human service workers became a topic for systematic research in Denmark in the 2000's by the National Research Centre for Work-environment (NFA), conducting the first Danish longitudinal study on the development of burnout (Borritz et al., 2005). To date, however, systematic efforts to investigate the incidence and development of secondary traumatisation and the interaction between burnout and secondary traumatisation in the Danish human service sector are scarce, and the effect of indirect trauma-exposure in child protection services remains understudied. Knowledge on these topics however are critical to orchestrate organisational efforts that might prevent the development of burnout and secondary traumatisation among child protection workers.

1.2.1. Development of the current project

The current project was formulated through bottom-up ideation by the Danish Children Centres in 2016 at a stage where the centres had established their methodological basis and procedures for working with survivors of child abuse and collaborating partners. The Danish Children Centres were founded in 2013 and are charged with coordinating intersectoral efforts across the social-, legal and health-care sectors in cases of suspected child-abuse and with providing a child-friendly site for conducting forensic interviews, psychological assessment and crisis-support for children and caregivers. Moreover, a core task of the Danish Children Centres' is to support the overall assessment of the child's developmental conditions conducted by the social sector by undertaking a specialised trauma-focused assessment of children's needs and well-being in cases of suspected child abuse. Throughout the three years past, employees and supervisors in the Danish Children Centres had

become increasingly concerned with how staff may be impacted by the continuous and intense exposure to trauma working with child survivors of abuse under the circumstances where there's "nothing to dilute with" in their highly specialised function.

The Danish Children Centres were founded in response to a series of severe cases of concurrent neglect, physical and sexual abuse of children that was uncovered by Danish media throughout the years 2000-2010. These were shocking cases of child abuse that had persisted through several years despite the sporadic involvement of the legal sector, healthcare sector and/or social sector. A review of the cases lead by the Danish National Board of Appeals found that the critical failure of the child protection system to intervene against the abuse was partially due to a lack of overview of the cases and an absent or insufficient cooperation between the social, legal and health-care sector involved in the cases (National Board of Social Service, 2012). This was partly conditioned on legislation that prevented the sectors from sharing information on cases of suspected child-abuse with each other. The National Board of Appeals concluded that there was a need for specialised assistance and systematic integration of the efforts towards child protection in cases of suspected child abuse. Following on from this, The Danish Children Centres were founded to support the existing initiatives for child protection in Denmark. Initially, there were 7 Children Centres across Denmark employing approximately 20 employees. In 2019, this had grown to a total of 10 Children Centres across the country, employing approximately 75 employees.

1.2.1. Child-protection in Denmark

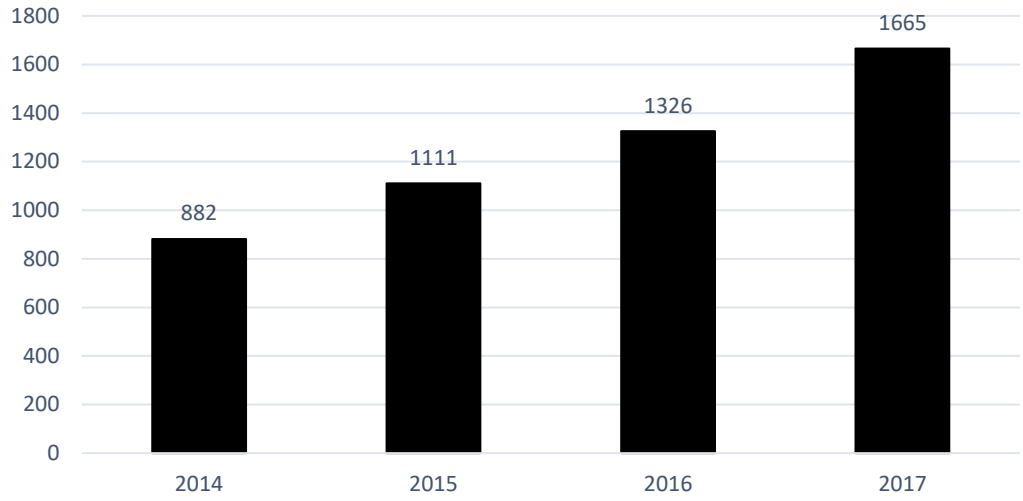
Denmark has approximately 5.7 million inhabitants out of which 1.16 million are children aged 0-17 years (Elmeskov & Bang, 2018). Recent estimates suggest that approximately one in every six children have been exposed to some form of

physical violence from their parents during the past year, and approximately 1% have been exposed to sexual abuse by an adult (Oldrup, Christoffersen, Kristiansen, & Østergaard, 2016). However, researchers have found that the risk of being exposed to child abuse is not equally distributed. Rather, national (Shevlin & Elklit, 2008) and international research (Ballard et al., 2015; Ford et al., 2010; McChesney et al., 2015) have shown that exposure to different types of child abuse tend to cluster (Shevlin & Elklit, 2008), which in turn increases the risk and severity of subsequent psychopathology (Finkelhor, Ormrod, Turner, & Hamby, 2005). Particularly the dispersion of severe events such as physical assault, neglect, abortion, and sexual abuse is small (Armour, Elklit, & Christoffersen, 2014; Shevlin & Elklit, 2008), highlighting the need for specialised and systematic early intervention in cases of suspected child abuse, as well as the high density of indirect trauma exposure that employees charged with delivering the intervention must endure.

1.2.2. Background for the current study in the Danish Children Centres

Since their establishment, the Danish Children Centres have worked a total of 4984 case of suspected child abuse (National Board of Social Service, 2018). Figure 1 illustrates the continuous yearly increase in cases since 2014 when the first registration was conducted. From 2014-2016 the number of cases increased by approximately 50 % (882 in 2014 to 1326 in 2016), and from 2016-2017 the number of cases continued to increase by 26%. In 2017, most cases in The Danish Children Centres were referred based on suspicion of physical abuse (73 %), followed by sexual abuse (23 %), and a combination of sexual and physical abuse (4 %, National Board of Social Service, 2018).

Figure 1: Children Centre Cases per year (2014-2017)



Source: The yearly Children Centre statistics report from The National Board for Social Services, 2017 (Socialstyrelsen, 2018). There is an almost equal gender-distribution in referrals to the Danish Children Centres with 46 % boys and 54 % girls (National Board of Social Service, 2018).

Due to the raison d'être of the child protection system in general and the Danish Children Centres in particular, child protection workers are highly exposed to potentially traumatizing material in course of their professional duties. In nature, the exposure includes narrative details of child-abuse, contact with victimized children or perpetrators, graphical evidence of child-abuse, and/or observation or participation in traumatic re-enactment during interventions or assessment (Pearlman & Saakvitne, 1995). The Danish Children Centers' primary purpose for hosting the study is the generation of knowledge that can inform organizational development in terms of preventive initiatives against the corrosive impact of this exposure, ultimately supporting the retention and well-being of their specialized employees. Two main threats to retaining and maintaining the well-being of child protection workers have been identified: Burnout, that might develop following organizational stressors and stressors related to human service work in general, and secondary traumatisation of employees that might develop following indirect exposure to the trauma suffered by the children referred to the child protection services (Bride, Jones

& MacMaster, 2007; Jayaratne & Chess, 1984). There is ample evidence to support the assumption that burnout and secondary traumatisation can be conceived of as occupational stress disorders related to human service work, however, the symptoms that constitute the syndromes and factors that predict their development differ in theoretical conceptualisation and empirical findings.

1.3. Burnout and secondary traumatisation

1.3.1. Burnout

The concept of burnout was developed as a non-theoretical grass roots movement through the 1960ies and 1970ies to describe aspects of work-related fatigue. Specifically, Robert Blauner, Herbert Freudenberger and Christina Maslach were among the first social scientists to use the term to describe feelings of exhaustion, alienation and reduced efficacy at work among diverse populations such as factory workers (Blauner, 1964), volunteers at a clinic for drug-addicted citizens (Freudenberger, 1974) and social workers (Maslach, 1976). Freudenberger (1974) used the term to describe depressive-like behaviour characterized by excessive exhaustion, quickness to anger, rigid thinking and physical symptoms such as headaches and dizziness, whereas Blauner (1964) emphasized feelings of alienation from the self, one's values and an acceptable identity as a worker as cardinal aspect of the syndrome. These aspects are unified in Maslach's (Maslach, Jackson, Leiter, Schaufeli, & Schwab, 1986) three-dimensional conceptualisation of burnout consisting of overwhelming exhaustion related to work, prevailing disengagement from work or cynicism towards clients, and feelings of lack of personal accomplishment.

The three-dimensional model of burnout mirrors the definition recognized in the World Health Organization's International Classification of Diseases (WHO,

2019a) as a work-related syndrome that might cause people to reach out to mental health services, whereas it is not in itself considered a disorder or clinical diagnosis. Similarly, Christina Maslach's three-dimensional definition of burnout and associated measure, the Maslach Burnout Inventory (Maslach, Jackson, Leiter, Schaufeli & Schwab, 1986), is one of the most used definitions and operationalisations of burnout, but there has been significant controversy on the extent to which all three components are necessary for defining burnout, or whether two or even one component is sufficient.

Across theoretical definitions, exhaustion is considered the core-aspect of burnout and is consequently the most thoroughly researched aspect of the construct (Maslach & Leiter, 2005). Indeed, some researchers emphasise only aspect of work-related exhaustion in their definitions of burnout (Kristensen, Borrtiz & Chrisenten, 2005; Pines & Aronson, 1988; Schaufeli & Greenglass, 2001; Shirom, 1989), suggesting that fatigue related to one's occupational engagements is both necessary and sufficient to comprise burnout. Conversely, other researchers have argued that merely defining burnout in terms of exhaustion makes it redundant with psychological fatigue (Thorndike, 1914), suggesting that exhaustion must be coupled with unwillingness to perform work at minimum to comprise the construct of burnout, thereby arguing for a two-dimensional definition consisting of exhaustion and disengagement (Demerouti & Bakker, 2008; Schaufeli & Taris, 2005). When investigated empirically, evidence appear to converge on the finding that exhaustion is most highly correlated with the dimension of disengagement compared to personal accomplishment (Taris, Le Blanc, Schaufeli & Schreurs, 2005), and that there is a causal relationship between exhaustion and disengagement (Rogala et al., 2016). Specifically, the phase model of burnout denotes that disengagement develops as a

response to exhaustion as a way of preserving resources and decreasing stress (Maslach, Schaufeli & Leiter, 2001), consistent with behaviour of individuals under stress as described by the Conservation of Resources theory (Hobfoll, 1989; Hobfoll, Halbesleben, Neveu & Westman, 2018)

In contrast, the dimension of personal accomplishment appears to be more peripheral to the construct of burnout, or to develop continuously throughout the prodromal phase instead of sequential to exhaustion or disengagement (Maslach, Schaufeli & Leiter, 2001). Scholars have suggested numerous explanations for this, including that feeling a lack of accomplishment develops following prolonged exhaustion and disengagement, or alternatively that lack of accomplishment it is particularly related to lack of relevant resources in the environment or individual personality (Maslach & Leiter, 2005). For the purpose of the current study, burnout is considered to be comprised of exhaustion and disengagement. Specifically, exhaustion is characterized by pervasive feelings of fatigue, being worn out and depleted of energy either emotionally, cognitively and/or physically (Demerouti, Mostert & Bakker, 2010). Disengagement encompasses negative or dehumanizing attitudes towards clients characterized as cynicism in human service work, and more generally a heightened sense of irritability, loss of idealism and withdrawal from work-related tasks (Maslach & Leiter, 2005).

Ample research has documented the risk of burnout among child protection workers, although incidence rates vary considerably. For example, a Canadian study of hospital-based child protection workers reported that around one third of the participants reported emotional exhaustion and high levels of cynicism in addition to low levels of professional efficacy (Bennet, Plint & Clifford, 2005), and a study of UK based paediatric intensive care employees found that 48 % reported emotional

exhaustion but a considerably lower proportion of 10 % reported depersonalisation corresponding to disengagement (Colville et al., 2014). In contrast, a survey of child protection social workers in Colorado suggested that only 7.7 % of the employees were in high risk of burnout (Conrad & Kellar-Guenther, 2006).

Theoretically, several conditions have been suggested to explain the development of burnout. The job demand-control-support model of job stress posited by Karasek & Theorell (1990) has received systematic empirical support for its' ability to predict the development of burnout (Demerouti et al., 2001). Specifically, the job-demand model proposed that it is the organisation of work rather than the demand for employees to work in itself that causes stress and burnout (Karasek & Theorell, 1990), underlining that psychological stress arises in situations where employees are prevented by environmental constraints from using their optimal response to discharge the psychophysiological energy raised by a stressor. This strain is highest when the employee is faced with high demands and low control over how to meet the demands, a condition that is associated with both low productivity and high occurrence of stress (Karasek & Theorell, 1990). Demands at work might be quantitative in nature, such as high caseloads or tight deadlines leading to high time-pressure at work, or emotional in nature, such as child protection work that requires employees to engage with uncomfortable material and suppress their emotional reaction to it in order to perform their task. Stress related to high demands at work becomes particularly critical when it is persistent over longer periods of time where the individual is unable to recover due to lack of periods of rest and relaxation (Maslach, Schaufeli & Leiter, 2001). Control on the other hand is a buffer against work-related stress (Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010), and refers to the capacity to decide how to meet demands at work and influence decisions of

importance for oneself, for example regarding how and when one's tasks at work are solved (Maslach & Leiter, 2005). Similarly, work related social support is protective against the development of burnout (Halbesleben, 2006; Parry, 1989) and might moderate the relationship between work stress and burnout (Etzion, 1984). Summarised, when demands exceed perceived available resources such as control and support to meet them, the situation becomes one of adversity that increase risk of burnout (Maslach & Leiter, 2005).

Additionally, the Conservation of Resources theory has also provided empirically supported mechanisms for the development of burnout (Alarcon, Edwards & Menke, 2011). Conservation of Resources theory was firstly introduced as an alternative to existing models of stress due to short-comings in particularly Lazarus & Folkman's (1984) appraisal based theory of stress that was argued to be tautological, resistant to empirical testing and importantly, might lead to overlooking stressors in the environment that was successfully coped with, thereby hampering progress on empirical identification of potential stressors (Hobfoll, 1989). The Conservation of Resources theory assumes that human beings seek to obtain, retain and protect resources. Therefore, the actual or potential loss of resources or the lack of resource gain following resource investment is threatening and therefore stressful. Consequently, we are prone to maximise personal characteristics and social circumstances that increase our opportunity to gain and retain resources and to avoid loss of resources (Hobfoll, 1989). Resources in this perspective may then both be practical or symbolic in nature, and include objects, personal characteristics, conditions or energies that is valued by the individual or that might serve in obtaining valued resources. For example, personal mastery or self-efficacy can be conceived of as resources that may be invested in meeting work-related demands that

in turn leads to resource gain in the form of social recognition and increased feelings of mastery. This implies that burnout is a process during which persistent demands at work deplete resources at a faster rate than they can be replenished, thereby reducing coping capacity and increasing psychological distress over time, ultimately leading to burnout (Freedy & Hobfoll, 1994). In perspective of Conservation of Resources theory, working conditions can be conceived of as posing either as threats to resource loss or supporting resource gain or retainment. This perspective is aligned with the predictions of the job-demand-control model where work-related demands might be conceived of as a threat to resources, whereas influence on how to address these as well as social support in doing so are considered resources. By extension, these resources might also include clarity regarding one's role and responsibilities as well as monetary or social rewards for job performance.

1.3.2. Secondary traumatisation

Secondary traumatisation is characterised by symptoms of posttraumatic stress disorder (DSM-IV-R, American Psychiatric Association (APA), 2000) such as intrusive memories, behavioural avoidance and hyperarousal caused by indirect exposure to traumatic material. The construct was introduced by psychologist Charles Figley (1995) in an effort to underline that the detrimental effect of traumatic experiences extend beyond the victim that might go on to develop posttraumatic stress disorder (PTSD) to the victims' family, friends and professionals helping the victim cope with the trauma. In this view, family members are 'indirect victims' of trauma that risk becoming secondarily traumatised by contagion from their emotional ties and closeness to the primary victim (Figley, 1995), and empirical findings have supported the potential for secondary traumatisation in spouses of prisoners of war in an Israeli context (Green, Lahav, Bronstein & Solomon, 2014; Lahav, Levin, Bensimon, Kanay-Maymon & Solomon,

2017). Empirical research has also supported the apparent dispersion of primary trauma (Figley, 1995) to professionals working therapeutically with survivors of trauma, and in recent research to professionals engaging with trauma survivors or traumatic material outside the therapeutic relationship (Perron & Hiltz, 2006). Mechanisms for the development of secondary traumatisation and similar outcomes have been proposed under what might be termed contagion models (Pross, 2006). Specifically, these models are founded on the proposition that the empathic engagement with trauma survivors forms the basis for a transmission whereby traumatic material and its' cognitive, emotional and behavioural consequences are induced in the therapists (Figley, 1995; McCann & Pearlman, 1990). Additionally, in their efforts to help survivors cope, the therapist might be overwhelmed by the survivors' experience of horror, lack of predictability and impotence in their moment of traumatisation (Lansen, 1993). In their theory of vicarious traumatisation, McCann and Pearlman (1990) proposed that the repeated or intense empathic engagement with trauma survivors has the potential to fundamentally change the inner experiences of the therapist, leading to lasting changes in basic feelings of trust, safety and esteem of the self, others and the world.

Early research on the topic has shown that child protection workers exhibit higher levels of trauma related symptomatology than the general population (Cornille & Meyers, 1999), and sometimes, severity of therapist symptomatology is comparable to the patients they are treating (Hafkenschneid & Lansen, 1992). In reflection of this, Figley suggested that posttraumatic stress disorder should be considered an umbrella term for primary traumatic stress disorders, reflecting PTSD symptoms in primary survivors, and secondary traumatic stress disorder, reflecting similar symptoms in secondary survivors that are indirectly exposed to the trauma of

the primary survivors (Figley, 1995). To increase the acceptability among professionals, Figley advocated that the terms secondary traumatisation and compassion fatigue be used interchangeably (Figley, 1995), thereby emphasising the origin of secondary traumatisation in the empathy and compassion of trauma-focused professionals. However, the debate on terminology of trauma-related indirect effects is ongoing (Stamm, 1995; Molnar et al., 2017; Sprang et al., 2018), and the mechanisms underlying the development of secondary traumatisation in the contagion model is still poorly understood.

The generalisation of secondary traumatisation to professionals (Figley, 1995) followed from observation of clinical professionals working with survivors of trauma, some of whom developed symptoms akin to those experienced by the survivors themselves. Observing that human service professionals have long been known to be vulnerable to experiencing stress due to their jobs as reflected by the construct of burnout, secondary traumatisation was initially presented as the active ingredient that also put professionals at risk for work-related distress (Figley, 1995). Initially, few theoretical considerations was offered on the pathways that could account for this proposition , however, having a personal and unresolved history of traumatic experiences, capability for empathic engagement, as well as exposure to traumatised children was proposed as factors that increased professionals' vulnerability towards the syndrome (Figley, 1995), and some have since garnered empirical support.

Specifically, empirical research has supported the importance of personal trauma history as a risk factor for secondary traumatisation (Cornille & Meyers, 1999; Follette et al., 1994; Kassam-Adams, 1995; Moran & Britton, 1994; Pearlman & Saakvitne, 1995; Schauben & Frazier, 1995), as well as retraumatisation through

work-related duties and secondary traumatisation (Butler, Maguin, & Carello, 2018). According to the WHO International Mental Health Survey, most people will experience at least one potentially traumatizing event in their lifetime (70.4 % of respondents), and many will experience more, seeing that the exposure average is 3.2 potentially traumatizing experiences per capita (Kessler et al., 2017), suggesting that processing a personal history of trauma could be relevant for most professionals working with trauma survivors. In a study of 345 therapists, 54 % reported having a personal trauma history and 88.5 % of these were treating trauma survivors with a history similar to their own (Wilson & Thomas, 2004). Similarly, Nelson-Gardell & Harris (2003) investigated histories of childhood trauma exposure using the childhood trauma questionnaire (CTQ) among child protection workers and found that while the average score on emotional, physical and sexual abuse as well as physical and emotional neglect ranged between none/minimal to low/moderate, particularly emotional abuse and sexual abuse displayed strong correlations to secondary traumatisation. Furthermore, Howard and colleagues (2015) found higher rates of adverse childhood experiences among resident child protection workers compared to the general population. When investigated in a regression model however, adverse childhood experiences were statistically nonsignificantly related to secondary traumatisation, displayed a negative relationship to burnout and a positive relationship to compassion satisfaction. Howard and colleagues (2015) hypothesised that this finding might be due to feelings of mastering adversity and satisfaction derived from helping others cope.

Modern theories on the development of empathy-based stress have carried on the assumption that empathic involvement with others are a prerequisite for developing distress following indirect exposure to traumatic material and

traumatised individuals (Daniels, 2006; Russell & Brickell, 2015). Similarly, Pross (2006) describes the strong feelings of sympathy and urges to help survivors of extreme violence when confronted with their life-stories, reflecting that the risk of losing professional distance is great. However, when investigated empirically in a sample of 171 licensed social workers, empathy was unrelated to both burnout and secondary traumatisation, whereas personal trauma history and personal distress was significant correlated of both (Thomas, 2013). Similarly, in a study among 314 employees in a child hospital, personal distress and fantasy, referring to one's general ability to imagine being someone else, were positively related to burnout and secondary traumatisation, whereas empathic concern was unrelated to both outcomes and perspective taking appeared to be protective as it was negatively related to both outcomes (Robins et al., 2009). Consequently, it appears that affective components of empathic engagement could increase risk of work-related distress in human service work, whereas cognitive empathic engagement appears to be safe or even protective (Robins et al., 2009). This is consistent with Hoppe's (1969 cited in Pross, 2006) accounts of attitudinal patterns in evaluators of the association between Holocaust survivors' experiences in concentration camps and their health-related concerns. Specifically, he identified 4 attitudinal patterns: one of total denial of the experiences of the survivor, one of rationalisation where experiences were recognised although any connection of the persecution to the presenting suffering was denied, overidentification with the survivor characterised by excessive sympathy and empathic involvement, and finally, controlled identification. In controlled identification, the professional is capable of seeing and recognising the impact of the horrifying experiences while not overemphasising with the client and continuously being able to observe his own reactions. The affective components of empathic

engagement referenced above may correspond to the overidentified attitudinal pattern, whereas the cognitive components of affective engagement might correspond to the controlled identification pattern.

In 2002, Figley (2002) proposed an etiological model of the development of secondary traumatisation. Specifically, empathic engagement was considered the germ of the syndrome, and following empathic engagement with trauma survivors, professionals are likely to experience excess emotional energy in the form of grief, pain, hopelessness and physiological arousal. Figley (2002) proposed that extent and amount of residual activation can be moderated by satisfaction with one's own efforts to help the client and the ability to distance oneself from the tragedy and misery of the client between sessions of psychotherapy, and Ludick & Figley (2017) added social support and self-care as potential moderators. Finally, Figley (2002) propose that the risk of secondary traumatisation is exacerbated if there is a prolonged exposure to demands of being empathic and compassionate, if the therapist experiences intrusive memories of clients and their narratives, and finally, the overall degree of life-disruption suffered by the therapist in general. This includes unexpected illness of oneself or a loved one, changes in routines or social status or personal/professional responsibilities.

Empirical research has provided support for this model in a piecemeal fashion. For example, studies among diverse professional groups and client groups have suggested that the specific nature of the residual emotional energy differs both between professional groups as well as client groups. Specifically, Smith (2009) reported that working with traumatised refugees evoked a high degree of involvement and feelings of being overwhelmed, whereas working with borderline patients evoked distancing, and Cheung and Boutte-Queen, (2000) found that police

officers were more likely to exhibit ambivalence and feelings of revenge, while social workers were more likely to feel generally discomforted. Rauvola and colleagues (2019) argue that the professional role-demands and norms might moderate risk of secondary traumatisation following indirect trauma exposure with role demands for empathic engagement and emotional support increasing the risk of secondary traumatisation.

Additionally, social support has been consistently found to be a protective factor against the development of secondary traumatisation with a recent meta-analysis finding that social support was the strongest protective factor against secondary traumatisation among therapists (Hensel et al., 2015). Conversely, much research has tried but failed to support the protective effect of self-care strategies against secondary traumatisation. For example, Bober & Regehr (2006) found that there was no association between the belief that leisure and self-care were effective in preventing secondary traumatisation and time allotted to engage in these activities, and additionally that there was no association between use of specific self-care strategies and reduction in secondary traumatic stress. Similarly, Salloum and colleagues (2015) tested an intervention where social workers were educated in trauma-informed self-care strategies and found that there was no statistically significant relationship between self-care strategies and secondary traumatisation, although engagement with the strategies appeared to be negatively related to symptoms of burnout (Salloum et al., 2015).

However, any thorough tests of Figley's (2002) theoretical model in explaining the development of secondary traumatisation are conspicuous by their absence. Additionally, the proposed theoretical model is unable to account for the findings reported by more recent empirical studies that factors related to the

organisation of work such as work-load, role clarity and role conflict impact the risk of secondary traumatisation (Baugerud et al., 2018), sometimes over and above the exposure to indirect trauma itself (Devilly, Wright & Varker, 2009; Regehr et al., 2004).

In contrast, recent innovation in theoretical frameworks for understanding the development of secondary traumatisation have placed a central emphasis on the organisation of work as well as the social and political context of working with trauma survivors. Specifically, Christian Pross (2006; 2010; 2014) argued that while effects of work-related stress in organisations treating survivors of trauma may indeed manifest itself in trauma-like phenomena, this should not to be understood first and foremost as a clinical disorder or an unavoidable contagion effect as professionals in well-structured organisations tend to exhibit markedly fewer symptoms (Pross & Schweitzer, 2010; Pross, 2014). Based on in-depth case-studies of organisations working with survivors of torture, persecution, domestic violence and sexual abuse, Pross (2014) proposed that organisations that fail to develop clearly defined and separate roles for board, management and staff, as well as clearly defined objectives for their efforts in working with survivors of trauma that in turn are clearly linked to methods of engaging with trauma survivors will be at risk for this type of work-related stress. Specifically, Pross (2014) and Pross & Schweitzer (2010) linked work-related stress that manifested itself as trauma-like phenomena to the organisations socio-political environment, where organisations that are reliant on donations as their economical foundation are more vulnerable, as well as structural short-comings in the organisation, such as lack of professional management and professional quality standards, diffusion of roles and competences, and lack of clinical supervision and therapeutic training, represent high-risk organisational

contexts. Additionally, organisations working with survivors of extreme trauma are often working outside of the established health care system where they employ highly dedicated members of staff that are often highly skilled, but receive little monetary reward, possibilities for advancement or social recognition in exchange for their efforts (Pross, 2006). The lack of symbolic recognition is important to professionals' mental health, as is therapeutic self-awareness and training as well as regular supervision and self-examination without which early burnout is inevitable (Pross, 2006).

Pross and colleagues propose a theoretical framework based on their in-depth analysis of organisations' working with survivors of trauma, but more research is required to further understand the relative importance of organisational factors and operational factors in predicting the development of secondary traumatisation. The proposition that organisational stressors are of central importance in understanding the development of secondary traumatisation have also been suggested and tested empirically in a study of mental health professionals providing services to military veterans. Specifically, Shoji and colleagues (2015) employed the Conservation of Resources theory (Hobfoll, 1989) to argue that prolonged exposure to organisational stressors deplete individual resources that are necessary for coping with the consequences of continuous indirect exposure to traumatisation endured as part of role-requirements in human service work with trauma survivors, thereby increasing the vulnerability to secondary traumatisation. Results from their longitudinal study of the relationship between burnout and secondary traumatisation supported this proposition as burnout at T1 increased the risk of developing secondary traumatisation, whereas secondary traumatisation did not increase the risk of developing burnout at a later measurement time (Shoji et al., 2015). To date, it

appears that this is the only study that has been conducted on the longitudinal relationship between secondary traumatisation and burnout, and the nature of the relationship between secondary traumatisation and burnout remains a topic of debate in international literature (Cieslak et al., 2014), partially due to comprehensive problems with the psychometric properties of measures used to operationalise the constructs (Heritage et al., 2018; Geoffrion et al., 2019).

1.3.3. Summary

Summarized, while the risk of developing negative psychological outcomes from doing human service work with survivors of trauma is well-established, conflicting findings exist regarding many risk- and protective factors for particularly secondary traumatisation: Some studies find that prolonged exposure to trauma increase the risk of secondary traumatisation (Baird & Kracen, 2006; Cornille & Meyers, 2002), while others have failed to reproduce the association (Dagan et al, 2016; Nelson-Gardell & Harris, 2003). Personal history of trauma has been associated positively with secondary traumatisation in some studies (Hensel, Ruiz, Finney & Dewa, 2015; Newell & MacNeill, 2010) while not in others (Elwood et al, 2011; Stevens & Higgins, 2002). Social support is consistently found to be negatively associated with secondary traumatisation (Craun, Bourke, Bierie & Williams, 2014; Ludick & Figley, 2016), whereas the protective effect of experience and training is debated (Boyas, Wind & Kang, 2012; Hensel, Ruiz, Finney & Dewa, 2015). These differences are theoretically consistent with the likely differences encountered across different studies in the organisation of work at the sites surveyed, as well as the role, quality of training and individual therapeutic awareness of the professionals surveyed (Pross, 2006; 2014). Additionally, while secondary traumatisation and burnout are theoretically distinct construct in so far as the former refers to symptoms of posttraumatic stress that develops following exposure to

adverse *content* at work, and the latter refers to generic exhaustion and disengagement following exposure to adverse *conditions* at work, understanding of their relationship and what might be done to prevent them is lacking. Knowledge on these topics is however important to the development of recommendations for prevention of work-related distress in organisations working with survivors of trauma where both burnout and secondary traumatisation pose relevant threats to occupational wellbeing among employees.

1.4. Limitations to current knowledge of occupational stress in child protection work

Although research on the development of burnout and secondary traumatisation has progressed throughout the past decades, there are still a number of limitations to our current knowledge on their development that must be taken into account when addressing the purpose of the current thesis. These include the relationship between secondary traumatisation and burnout, the clinical relevance of secondary traumatisation, the occurrence of burnout and secondary traumatisation in Danish child protection workers and methodological limitations in existing research.

1.4.1. Relationship between secondary traumatisation and burnout

When introduced as a concept, secondary traumatisation has been proposed to be the "syndrome that puts most therapists at risk" (p. xiv) for occupational stress such as burnout (Figley, 1995). Since then, the proposition that secondary traumatisation leads to burnout has been propagated by other scholars (Chung & Choo, 2019; Hopwood, Schutte & Loi, 2017; McFadden et al., 2015), and some research has found empirical support, in a longitudinal study of ambulance personnel, for the hypothesis that posttraumatic stress following direct trauma exposure at time 1 leads to higher levels of emotional exhaustion and time 2 (Van

der Ploeg & Kleber, 2003). However, whether this finding extends from primary traumatisation to the relationship between secondary traumatisation and burnout is most unclear as the majority of research on the topic is cross-sectional (Cieslak et al., 2014). As of yet, only one longitudinal study has currently been published studying the relationship between secondary traumatisation and burnout conducted among trauma mental health care providers from Poland and USA (Shoji et al., 2015). Findings from this study reflected that secondary traumatisation remains fairly stable over time as previously demonstrated in a sample of law-enforcement personnel (Craun, Bourke, Bierie & Williams, 2014), and notably, that burnout precipitates secondary traumatisation, but secondary traumatisation does not precipitate burnout (Shoji et al., 2015).

While indirect exposure to traumatic material is the corner-stone of secondary traumatisation, theoretical accounts of the phenomena recognise the individual nature of traumatisation as well as the mediating effect of individual, social and cultural factors such as conditions of exposure, social support and cognitive schemes (Cerney, 1995; Ludick & Figley, 2017; Pearlman & Saakvitne, 1995). Likewise, child protection work is by nature human service work whereby some relation between exposure and burn-out would be expected (Zapf, 2002). However, the potential direct role of organizational factors for the development of secondary traumatisation is less apparent. This is partially due to a tendency in the current literature towards theoretical supremacy from one of two positions when investigating occupational stress in trauma exposed populations. Either 1) a predominantly psychotraumatological framework is imposed, focusing on potentially traumatizing effect of the encounter between the employee and the client, largely disregarding organizational factors in the theoretical formulation of negative effects

and in the empirical investigation of adversity (Cornille & Meyers, 1999; Ludick & Figley, 2016), or 2) a work- and organizational perspective is employed aimed at exploring the risk and protective factors for burnout across different occupational settings, largely disregarding the potentially traumatic content of the work. Recent research has begun bridging the gap by exploring psychotraumatological and organizational factors simultaneously, producing mixed findings regarding the paths towards secondary traumatisation. Contemporary empirical findings comparing the explanatory power of trauma-related and organizational models suggest that organizational factors under some circumstances might account for symptoms of secondary traumatisation better than operational factors such as indirect trauma-exposure (Boyas, Wind & Kang, 2012; Choi, 2011; Devilly, Wright & Varker, 2009). In conjunction with recent theoretical development on the importance of social and organisational factors for the development of work-related trauma symptoms (Pross, 2006; 2014; Pross & Schweitzer, 2010), a further exploration of the relative importance of organizational, operational and individual predictors of burnout and secondary trauma may provide useful insights to further advance the field of research (Cieslak et al., 2014; Rauvola, Vega & Lavigne, 2019). This would similarly allow for the identification of potential shared risk- and resilience profiles for employees in trauma-related human service work that would be valuable for the development of generic preventive initiatives against work-related stress. Hence, a comprehensive survey and analysis of the role of individual, organisational and operational factors in identifying employees at risk for secondary traumatisation and burnout among Danish child protection workers is a key contribution to be made by the current study.

1.4.2 The clinical relevance of secondary traumatisation

The construct of secondary traumatisation has been conceptualised as a syndrome identical to PTSD only developing following indirect exposure to trauma in place of direct exposure (Figley, 1995). However, measures used to research secondary traumatisation vary greatly in their content and are insufficient in operationalising secondary traumatisation in ways consistent with PTSD. For example, the Secondary Traumatic Stress Scale (Bride, Robinson, Yegidis & Figley, 2006) only require symptomatology to be present for one week, and the items of the Professional Quality of Life Scale (ProQoL, Stamm, 2010) does not operationalise all symptoms of the PTSD diagnosis. Additionally, disagreement persists around the extent to which measures of secondary traumatisation should be confined to symptoms of posttraumatic stress disorder such as operationalised by Bride and colleagues (2006) or whether it should incorporate all distressful experiences reported by trauma-exposed professionals (Sprang, Ford, Kerig & Bride, 2018). Figley (1995) has suggested that secondary traumatisation should be comprised of up to 73 symptoms and only PTSD symptoms in the same book (Figley, 2005), and recently published research agendas call for a comprehensive measures that can assess the full range of secondary traumatisation and vicarious traumatisation (Sprang et al., 2018). In addition to discrepancies between conceptualisation and operationalisation of secondary traumatisation, there is a dearth of research on the distress and functional impairment associated with secondary traumatisation, the prevalence of clinically relevant levels of distress, and how symptoms are best addressed (Elwood, Mott, Lohr & Galovski, 2011). Estimating the prevalence of clinically relevant levels of secondary traumatisation and burnout as indicated by associated levels of distress and functional impairment among Danish child protection workers will be a key contribution of the present study.

1.4.3. Occurrence of secondary traumatisation and burnout among Danish child protection workers

The topic of burnout has received systematic attention in Denmark for the past two decades. The first Danish longitudinal study on occupational burnout, motivation and work-satisfaction (Danish acronym: PUMA) was conducted by the National Research Centre for Work-Environment across the Danish working population (Borrtiz, Rugulies, Christensen, Villadsen & Kristensen, 2006; Kristensen, Borritz, Villadsen & Christensen, 2005). Specifically, the PUMA was a 5 year long prospective intervention study with the overall purpose of mapping the occurrence of burnout among different occupational groups, explore the causes and consequences of burnout in Denmark and evaluate the effect of interventions to reduce burnout and increase motivation and job-satisfaction among employees (Quist & Bach, 2009). While there were no results presented regarding the risk of burnout among child protection workers in particular, results from the project suggested that human service workers such as midwives, elder care workers and prison officers were among the occupational groups with the highest level of burnout, whereas supervisors and office employees reported some of the lowest levels (Borritz, Rugulies, Björner, Villadsen, Mikkelsen & Kristensen, 2006). Additionally, burnout was significantly associated with job satisfaction and sickness absence rates (Borritz, Rugulies, Christensen, Villadsen & Kristensen, 2006), and factors such as low predictability, low role-clarity, low possibilities for development, as well as high role-conflict, high meaningfulness, and high leadership quality increased the risk of developing burnout over time (Borritz, Bültmann, Rugulies, Christensen, Villadsen & Kristensen, 2005).

In contrast, the occurrence of secondary traumatisation has only been sporadically researched in a Danish context. Specifically, one interview-study has

been identified that was conducted among Kosovo-Albanian interpreters following the Serbian persecution in Kosovo (Holmgreen, Søndergaard & Elklit, 1999). Holmgreen and colleagues (1999) interviewed twelve interpreters assisting at the Danish Red Cross asylum reception centre in assessing the refugees upon arrival. The interpreters reported high levels of distress with the most distressing experience being interpreting at interviews for psychologists due to the content of the conversation. Additionally, interpreters were experiencing high work-related demands. For example, they often worked overtime, had insufficient breaks and suffered high pressure due to high demand both within and outside of the centre (Holmgreen et al., 1999). Holmgreen and colleagues (1999) suggested that a considerate and respectful treatment of interpreters may enhance the quality of therapeutic work and protect their occupational wellbeing, and that interpreters additionally should be offered supervision by experienced psychotraumatologists to help them process the material.

Another study that appears to be conducted from Denmark surveyed institutions treating survivors of torture around the world (Lansen, 1993). The study was sent to supervisors of 99 centres around the world and focused on mapping the awareness of risk of secondary traumatisation, perceived causes, what employees were considered to be most at-risk, what preventive efforts were offered, and what efforts were considered to be most effective. Based on responses from 25 organisations, Lansen (1993) concluded that working alone on trauma-cases should be avoided, and that organizations should consider team supervision, training, caseload management and preventive strategies against burnout among key preventive measures. Finally, secondary traumatisation has been addressed in commercial literature by Bang (1999; 2004) based on reflections on providing

psychosocial support in the former Yugoslavia following the 1992-1998 wars, and as general reflections on the impact of human service work on the professional helper, respectively. More recent commercial literature includes Høgsted (2018) considerations on secondary traumatisation as one of the potential outcomes of psychological high-risk occupations. However, systematic research on secondary traumatisation among larger populations of employees are conspicuous by their absence. As such, the survey and analysis of factors associated with risk of burnout and secondary traumatisation serves allows for the estimation of the prevalence and severity of the syndromes among Danish child protection workers.

1.4.4. Methodological considerations on current literature

Throughout the past decades, research in psychotraumatology and work- and organisational psychology has increasingly employed sophisticated statistical modelling techniques such as structural equation modelling to further our knowledge on the development of detrimental outcomes (Brewin et al., 2017; Hyland et al., 2017; Keller et al., 2017). Despite the advantages of structural equation modelling and the increasing application of this methodology in quantitative studies on posttraumatic stress disorder (e.g. Hyland, Shevlin, Adamson & Boduszek, 2014) and burnout (e.g. Goong, Xu, & Li, 2016), it appears that the systematic use of structural equation models have yet to be applied to research exploring the relationship between burnout and secondary traumatisation and to investigate the development of secondary traumatisation itself. This is desirable, however, as structural equation modelling offers a more flexible and precise approach to statistical analysis compared to traditional statistical analyses based on linear composite scores. For example, it allows for the correction of measurement error, and for comparison of competing theoretical models in their ability to explain the observed patterns of data as an inherent part of the analysis.

The procedure of using linear composite scores in statistical modelling of psychological outcomes assumes that items operationalised to measure psychological phenomena are an error-free reflection of the phenomena they purport to measure, and that each item is equally suited to measure the latent phenomena. It is uncontroversial that these assumptions are not met in psychological sciences (Bollen & Lennox, 1991), i.e. that questionnaires designed to measure psychological phenomena are riddled with measurement error (Mortensen, 2006). Measurement error denotes the degree of imprecision in items measuring psychological outcomes. These can either be systematic or random. Systematic error is invariant across measurement times and conditions, meaning that they contribute to reliability but reduce the validity of the interpretation based on the measure (Pedhazur & Schmelkin, 1991). Conversely, random error varies between times and conditions and will have a mean of 0 if infinite measures could be conducted, meaning that it does not affect the validity of the interpretation (Pedhazur & Schmelkin, 1991). Utility of any measure is dependent on its' validity that is partly dependent on its' reliability, and generally, the higher the model-complexity, the more prevalent is the issue of measurement-error (Shevlin, 1995). As models of burnout and secondary traumatisation are usually comprised of many variables with complex relationships (Figley, 2002; Hobfoll et al., 2018), the ability to model measurement error is an invaluable quality for developing appropriate models of secondary traumatisation and burnout that can help advance research and practice in the area.

1.5. Aim and content of the current thesis

Overall, the aim of the current study is to aid the Danish Children Centres in the generation of knowledge that can inform organizational development in terms of preventive initiatives against secondary traumatisation and burnout, thereby

ultimately supporting the retention of specialized staff. This is accomplished through three related objectives, namely estimating the occurrence of secondary traumatisation and burnout among Danish child protection workers, developing a psychological model of secondary traumatisation and burnout that in turn will inform the final objective of developing of recommendations for preventing burnout and secondary traumatisation among employees in the Danish Children Centres. These objectives are met using data generated from an online survey distributed to child protection workers in municipalities, police districts and the Danish Children Centres. In preparation for this survey, a systematic literature review and preparatory field work in the Danish Children Centres was undertaken to inform the content of the survey. This work is presented in chapter 2 and 3.

More specifically, chapter 2 presents a systematic literature review of studies on predictors of burnout and secondary traumatisation among child protection workers conducted in preparation for the empirical study. This chapter partially addresses limitation 1.4.1., outlined above, by providing a detailed exploration of the extent to which any empirical overlap between burnout and secondary traumatisation as stress responses extends to their models of risk- and protective factors researched in contemporary peer-reviewed literature.

Chapter 3 presents the methodology of the current study, including the design of the project in general and the design of the survey specifically including the field work conducted with the Danish Children Centres in scoping the content of the survey and ensuring its' relevance to the particular context of child protection work in the Danish Children Centres. The familiarity with the organisational structure also contributes the applicability of recommendations for preventing secondary traumatisation and burnout in the context of the Danish Children Centres. This

chapter addresses the limitations outlines under section 1.4.3 above in conjunction with chapter 4 and 5:

Chapter 4 tests competing models of the latent relationship between burnout and secondary traumatisation to further explore the relationship between the constructs in a Danish context and the degree to which they can be conceived of as separate syndromes. This is accomplished using confirmatory factor analysis and exploratory structural equation modelling to identify the most accurate statistical representation of the latent constructs and their relationship to substantiated predictors. Chapter 5 further elaborates on the occurrence of secondary traumatisation and burnout among Danish child protection workers by using latent class analysis to overcome limitations related to scoring procedures of the measures to identify participants at high risk for either burnout or secondary traumatisation. Specifically, chapter 5 addresses limitation 1.4.2. by using latent class analysis to identify participants at risk of either burnout or secondary traumatisation. Participants at clinically significant levels of distress were identified by means of comparison of scores on common mental health disorders such as anxiety and depression, general well-being, and functional impairment across classes. Chapter 6 further explores the association between high risk groups for secondary traumatisation or burnout and individual, organisational and operational risk and protective factors through means of multivariate regression. Finally, chapter 7 summarises and discusses findings and limitations of the current study before providing recommendations to preventing secondary traumatisation and burnout among employees in the particular context of the Danish Children Centers.

Chapter 2:
Literature review

Abstract

It has been demonstrated that working with trauma-exposed children increase the risk for developing secondary traumatisation and burnout. High correlations between secondary traumatisation and burnout have been reported, suggesting an empirical overlap between the constructs. The purpose of the present review was to synthesise research investigating covariates of burn-out and secondary traumatisation to explore whether this overlap extends to covariates. 7 research databases were searched for studies investigating covariates of both burn-out and secondary traumatisation. Identified studies were screened in accordance with predefined inclusion and exclusion criteria, resulting in 13 articles being included for further review. 14 covariates were examined in two or more of the included studies and were synthesised according to the 'levels of evidence approach'. Some individual and operational factors appeared to be equally related to burnout and secondary traumatisation. There was a predominance of equivocal evidence for and against the salience of different covariates as well as an over-representation of demographic factors compared to organizational and operational factors in the current literature. More research investigating the nature of the overlap between burnout and secondary traumatisation is needed, and future research would benefit from integrating covariates supported in the work- and organizational literature with covariates from the psychotraumatological literature.

Contents

Parts of this chapter has been published as a peer-reviewed manuscript in the British Journal of Social Work under the reference:

Vang, M. L., Gleeson, C., Hansen, M., & Shevlin, M. (2019). Covariates of Burnout and Secondary Traumatisation in Professionals Working with Child Survivors of Trauma: A Research Synthesis. The British Journal of Social Work.

2.1. Introduction

Working with survivors of childhood-trauma is associated with risk of reduced occupational well-being (Anderson, 2000; Dagan et al., 2016). The psychological adversity associated with working with survivors of trauma has been researched from different theoretical perspectives and most research has been conducted from either a work-and organizational perspective under the concept of 'burnout' (Maslach et al., 2001), or from a psychotraumatological perspective under the concept of 'secondary traumatisation' (Figley, 1995) and related constructs.

Burnout (BO) is a syndrome characterized by feelings of exhaustion, depersonalisation and reduced sense of personal accomplishment developed as a response to prolonged exposure to a stressful work-environment (Demerouti et al., 2010; Maslach and Leiter, 2016). The combination of emotionally demanding work and occupational stress may induce a high risk of developing BO and the syndrome is particularly prevalent in employees doing human service work (Zapf, 2002). A longitudinal study has identified a subset of occupational conditions predicting the development of BO among Danish human service workers, namely low predictability, low role-clarity, low possibilities for development and high meaningfulness, quality leadership and high role-conflict (Borritz et al., 2005).

The impact of doing human service work with survivors of trauma has been investigated under several different concepts: secondary traumatization (ST, Figley, 1995), vicarious traumatization (McCann and Pearlman, 1990) and compassion fatigue (Figley, 1995; Stamm, 2010) being the most prominent. The conceptualizations differ in their focus (see Newell and MacNeil, 2010 for elaboration), however, all three share a common emphasis on working with survivors of trauma as a necessary antecedent for their development. Symptoms of ST are akin to those of posttraumatic stress disorder (PTSD) and develops from indirect exposure

to clients' traumas and their trauma-reactions. Consequently, intrusive thoughts, avoidant behaviour and hyperarousal has been documented in various professionals working with survivors of trauma (Cieslak et al., 2014). A recent meta-analysis of risk-factors of ST in therapeutic work established personal trauma, work support, social support and caseload ratio, frequency and volume as the strongest covariates of ST (Hensel et al., 2015).

The theoretical distinction between BO and ST is clear insofar that BO is primarily related to the organizational context of work (e.g. working conditions) and ST to the operational content of work (e.g. traumatized clients and their narratives). However, the aetiology and covariates of both constructs have been considerably debated (Elwood et al., 2011; Kristensen et al., 2005), and the empirical distinction between the concepts is less clear. In a meta-analysis of 41 studies published until 2012 that investigated the relationship between BO and ST, Cieslak and colleagues (2014) reported a large average correlation between the concepts (weighted r=.69). When BO and ST were conceptualized using the compassion fatigue (ProQoL) framework, the correlation was even higher (weighted r=.74, Cieslak et al., 2014), suggesting that the two constructs might be close to statistically indistinguishable.

There may be a number of reasons for this. It is generally recognized that there is a degree of conceptual overlap between the constructs (Elwood et al., 2011), and some researchers have suggested that this overlap is due to measurement issues, with the ProQoL operationalisation of BO and ST being ill-suited to separate the constructs (Cieslak et al., 2014; Heritage et al., 2018). Other studies have found that variables related to indirect trauma-

exposure are not particularly related to ST, but also to BO (Birck, 2002; Deighton et al., 2007), and that organizational factors are also related to ST in addition to BO (Newell and MacNeil, 2010). While providing services to trauma-survivors (e.g. the content of work) is inherently recognized as a potential risk factor for BO through its nature as human service work, theories on ST largely disregard organizational factors (e.g. context of work) in the development of this syndrome (Elwood et al., 2011; Ludick and Figley, 2017; Stamm, 2005). An exception is Pross and Schweitzer (2010) who argued that organizations characterised by high levels of stress among employees tend to exhibit a considerable lack of organizational structure and predictability that mirrors the conditions under which psychological traumatisation occurs.

Some empirical studies have investigated the relationship between organizational factors and ST: Regehr and colleagues (2004) used structural equation modelling to assess covariates of posttraumatic distress in child welfare workers. They concluded that chronic stressors in the organizational environment predicted posttraumatic distress over and above individual and operational factors. Cieslak and colleagues (2013) replicated the importance of work-related factors such as high demands and high caseloads for ST in military health providers. Finally, Devilly, and colleagues (2009) compared the predictive validity of the theoretical models of ST, vicarious traumatisation and BO for each of the three concepts in a sample of mental health professionals. They found that ST and vicarious traumatisation were better predicted by the theoretical model for BO than by their own theoretical models. However, this finding may be partially a statistical artefact since the theoretical model of BO consisted of 6 covariates (work stress, work satisfaction, career-duration, social support, weekly working-hours, number of clients per week). By

contrast, the theoretical models of ST and vicarious traumatisation were identical and consisted of only one covariate (time spent working with survivors of trauma).

Taken altogether, current evidence suggests that there might be an overlap in the conceptual and predictive models of ST and BO, but the extent and nature of the overlap is unclear. Cieslak and colleagues (2013) have reported similar rates of ST across different populations of providers but suggested that predictors might differ across them. Sage, Brooks and Greenberg (2017) have recently conducted a systematic review highlighting covariates of ST among child-protection workers, but an overview of differences and similarities in covariates of ST and BO in professionals working with child survivors of trauma is lacking.

The aim of the present review was therefore to synthesise and compare evidence of covariates of ST and BO respectively among employees working with child survivors of trauma among professions such as social workers, psychologists, law-enforcement personnel (hereunder forensic doctors and interviewers) and paediatricians. The review aimed to synthesise separate models of covariates of both outcomes. This simultaneously allows for an assessment of the strength of individual covariates for each outcome as well as a comparison of the models to identify factors that correlate with both outcomes.

2.2. Method

2.2.1. Terminology

One of the most frequently cited limitations to the current field of research on ST is the lack of consistent terminology (Cieslak et al., 2014;

Elwood et al., 2011; Hensel et al., 2015; Sage et al., 2017). This is to such an extent that providing a comprehensive and coherent theoretical account of the phenomena to guide development of appropriate screening tools, diagnostics and interventions is deemed cardinal in the agenda for advancing science and practice within the area (Molnar et al., 2017). While a discussion of the theoretical integrity and derived clinical applicability of ST as a concept is beyond the scope of this paper, it is recognized that concepts such as vicarious traumatisation and compassion fatigue sometimes are used interchangeably with ST, and sometimes delineate phenomena described as related to, but distinct from ST. Only studies operationalising ST and related concepts as characterized by symptoms mirroring those of PTSD will be included in the present review. To aid readability, these syndromes will be referred to collectively as ST.

2.2.2. Literature search

A systematic search for studies on covariates of ST and BO in child-protection workers was conducted in June 2018. The search included the following databases: EMBASE, PILOTS, PsycINFO, PubMed, ScienceDirect, Scopus and Web of Science. A search-matrix combining key-words for BO (burnout OR burn-out OR burn out OR "burn out") AND ST ("secondary trauma*" OR "vicarious trauma*" OR "compassion fatigue" OR trauma* OR posttrauma* OR PTSD) was employed to ensure consistent search-strategies in all databases. This string includes the keywords of the search-string used by Cieslak and colleagues (2014) and facilitated the inclusion of relevant studies published in 2012 or after. For studies published before 2012, the studies included in Cieslak and colleagues' (2014) meta-analysis were reviewed and included in accordance with the inclusion and exclusion criteria. Cieslak and colleagues (2014) investigated the correlation between BO and ST based on a systematic review and meta-analysis of studies published before 2012

investigating the relationship between BO and ST and employed selection-criteria compatible with the current review.

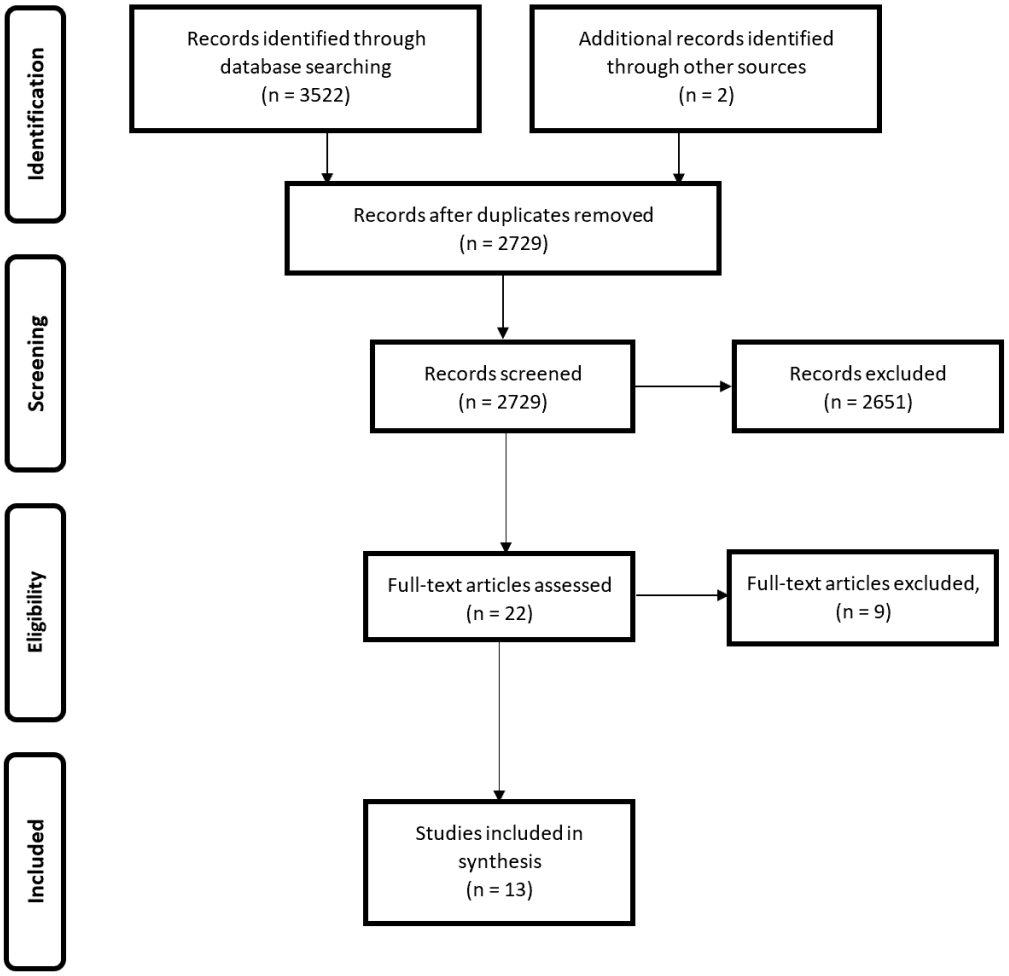
2.2.3. Inclusion and exclusion criteria

Articles were screened according to criteria developed a priori. Inclusion criteria: Publication is a peer-reviewed, written in English, is a research article that investigates covariates of both BO and ST (or vicarious traumatisation or compassion fatigue) separately. Exclusion criteria: Publication is a review, meta-analysis, thesis or book (-chapter), focus on parents or caregivers, is an intervention- or qualitative study, solely investigates the interrelationship between BO/ST/compassion fatigue or focuses primarily on populations not relevant to the present review.

2.2.4. Selection-procedure

An overview of the selection process can be seen in Figure 2. MLV and CG conducted the screening and selection of articles, both screening all studies. When disagreement about the suitability of studies arose, these were to be discussed in relation to the selection criteria. There were no disagreements. A deliberately conservative screening strategy was employed, meaning that studies that did not meet exclusion criteria were included in the subsequent step. Where possible, the initial search was conducted using database filters such as ‘English language’ and year of publication (2012 or later). This resulted in a total of 3522 hits across databases. These hits were exported to EndNote for further review and screened on title and abstract. After references had been deduplicated, 2729 studies remained. These studies were screened for relevance on title, abstract and study population, leaving 21 studies.

Figure 2: Selection of studies for review



The reference-list of these studies were examined to ensure inclusion of relevant studies that might have been missed during the initial search. Two additional studies were deemed relevant, one was included, and one failed the peer-review criteria. Full texts were obtained for the 22 studies for detailed screening. Of these, three studies were excluded as they failed to meet the criteria for peer-review and six studies were further excluded due to the profession of participants. The final number of studies included in this review was 13.

2.2.5. Review-procedure

Data-extraction was initially conducted by MLV, who extracted and tabulated the data for review and CG checked the accuracy of the data-extraction. To be included in the review, a covariate had to be researched by at least two studies. To assess support for each covariate, Miller and Thoresen's (2003) levels of evidence approach was employed. The approach involves two stages: In the first stage, an assessment of individual study-quality was conducted with studies placed in one of three categories, A, B or C, A being the highest quality rating. In the original approach, peer-reviewed studies would automatically be assigned quality-rating A, however, as the inclusion criteria of peer-review adopted for the present review would automatically grant all studies an A-rating, a modified quality assessment was undertaken to more accurately differentiate the quality of the studies. All studies fulfilling the inclusion criteria of the current review were survey studies. Survey methodology is characterized by using systematic methods for gathering information from entities to construct quantitative descriptors of the population of which they are members (Groves, Fowler, Couper, Lepkowske, Singer & Tourangeau, 2009). Hence, unique features of survey research include the explicit intention of generalizing quantitative findings obtained in an uncontrolled setting about phenomena to a prespecified target population. The procedure of conducting survey research in psychology thereby requires two inferential leaps: One related to measurement, whereby an abstract construct (such as secondary traumatisation or burnout) is operationalised into concrete questions purportedly measuring the construct, and one related to representation whereby sample characteristics are generalized to represent the target population (Groves et al., 2009). Groves and colleagues (2009)

developed the total survey error paradigm as a conceptual framework for evaluating survey quality considering potential sources of error across the entire cycle of survey research, thereby addressing sources of error that might interfere with validity of inferences in relation to measurement and in relation to representation. The final criteria for the quality assessment was adapted from this framework and the National Institute of Health's schedule for Quality Assessment of Observational Cohort and Cross-Sectional Studies (NIH, 2019). Questions relevant to cross-sectional studies were selected from the NIH and two additional question regarding the reporting of statistical analyses and sampling error were added to address additional potential sources of error, leaving a total of 10 side-ordered criteria each yielding 1 point if satisfied. These criteria included whether the study had: (1) a clear research-question or hypotheses, (2) a clearly defined target population, (3) taken steps to address coverage error (for example under-coverage), (4) taken steps to address sampling error (for example, were some units in the target population not given the chance to participate in the survey?), (5) increased risk of non-response error, (6) provided evidence or discussion of statistical power, (7) addressed exposure variability in covariates, (8) provided information on independent variables, (9) provided information on dependent variables, and (10) provided an accurate and sufficient report of statistical analyses. Table 2.2.5.S A and B in the supplementary materials detail the questions in their full length and the ratings for individual studies that are also summarized in Table 1. A score between 8-10 points yielded an A-rating, 6-7 points yielded a B-rating, and 5 points or less yielded a C-rating.

In the second stage, an assessment of support or lack of support for each covariate was conducted. We tested the hypothesis that each covariate qualifying for assessment would be related to ST and BO. The support for each covariates could

fall into one of three categories (Miller and Thoresen, 2003): 1) Persuasive evidence: hypothesis is supported by a statistically significant finding in at least 3 category A studies or 5 studies from categories A and B; 2) Reasonable evidence: hypothesis is supported by a statistically significant finding in at least 2 category A studies, or 3 to 4 studies from categories A and B; and 3) Some evidence: hypothesis is supported by a statistically significant finding in at least 1 category A study, or at least 2 category B studies. This framework has previously been used in a research-synthesis on correlates of ST and vicarious traumatisation (Baird and Kracen, 2006).

In cases where both bivariate correlations and multiple, hierarchical or logistic regression-coefficients are calculated, we refer to the highest level of evidence (multiple, hierarchical or logistic regression) as the basis of judging whether a study lends evidence for or against a hypothesis.

2.3. Results

A total of 13 studies were identified. Out of these, one study focused primarily on mental health professionals (Killian, 2008), four were conducted among social workers (Baldschun et al., 2017; Baugerud et al., 2018; Salloum et al., 2015; Sprang et al., 2011), four studies focused on law-enforcement personnel (Brady, 2016; Perez et al. , 2010; Perron and Hiltz, 2006; Tehrani, 2016), and four studies were conducted among employees at a children's hospital (Fisackerly et al., 2016; McGarry et al., 2013; Robins et al., 2009; Weintraub et al., 2016). No studies focused on forensic doctors working with children exposed to trauma. Table 1 displays the study-characteristics. Two studies were assigned a quality-rating 'B' (Fisackerly et al., 2016; Robins et al., 2009), and two studies were assigned a 'C' (Killian,

2008; Tehrani, 2016). The authors have not been given the opportunity to provide additional information on these unclarities for the present review. The remainder of the studies received quality-rating A.

A total of 3,266 persons distributed across sample sizes varying from 28 to 577 participated in the studies in the present review. Nine studies were conducted in USA and Canada, three studies in Europe and one study was conducted in Australia. All studies were cross-sectional in nature, and ten studies employed part of or the entire compassion-fatigue framework in conceptualising BO and ST, reporting average correlations between the outcome-variables comparable to Cieslak and colleagues (2014). A total of 39 covariates of BO and ST were investigated across the studies distributed across individual factors, organization-based covariates and operational covariates.

Table 1: Studies included in the literature synthesis

Study (first author and publication year)	N (rounded % males)	Occupation	Country	Type of analysis	ST measure	BO measure	r	Study-quality	Remarks from quality assessment
Baldschun (2017)	364 (9.9)*	CPW	Finland	T-test	ProQoL-R-IV	ProQoL-R-IV	-	A (9)	Only results separable for CPW are assessed and included. Did not account for power analysis.
Baugerud (2018)	506 (10.3)	CPW	Norway	Hierarchical regression,	ProQoL-5	ProQoL-5	.47	A (9)	Did not account for power analysis.
Brady (2017)	443 (72)	Police, ICAC	United States	Multiple regression	ProQoL-5	ProQoL-5	.67	A (8)	Did not account for power analysis. Some standardized β-values in regression were above 1. The reason for this was not provided.
Fisackerly (2016)	154 (2)	Child-life specialists	United States	Correlation, chi-square	ProQoL-5	ProQoL-5	-	B (7)	Nonresponse error could not be determined, did not account for statistical power analysis, unclarities in the presentation of statistical results makes hampers interpretation.
Killian (2008)	104 (21)	Therapists	Canada	Multiple regression	ProQoL-3	MBI	.69[a]	C (5)	Insufficient description of independent variables, steps

									of analysis and statistical results. Nonresponse error could not be determined, did not account for power analysis.
McGarry (2013)	54 (17)	Pediatric ward employees	Australia	Correlation, t-test, ANOVA	ProQoL-5	ProQoL-5	.597	A (8)	Did not account for power analysis, sampled solely from one organisation.
Perez (2010)	28 (75)	Police, ICAC	United States	Correlation	STSS	MBI	.745[a]	A (8)	Sampled only one organization, did not account for power analysis.
Perron (2006)	59 (10)	Police, forensic interviewers	United States	Correlation, t-test.	STSS	OLBI	.643[a]	A (9/10)	Nonresponse error criterion passed on participant level, but not on organizational level.
Robins (2009)	314 (18)	Child hospital employees	United States	Hierarchical regression	CFST	CFST	.756[a]	B (7)	Sampled solely from 1 organisation. The CFST is reported as a 5-point scale going from 0-5. Range of scores on burnout inconsistent with number of items.
Salloum (2015)	104 (18)	Social workers	United States	Hierarchical regression	ProQoL-5	ProQoL-5	-	A (9)	Could not determine whether sample belonged to same organization or 3 different.

Sprang (2011)	577 (33)	Child welfare workers + others	United States, Canada	Hierarchical regression	ProQoL-R-IV	ProQoL-R-IV	.66	A (8/9)	The ProQoL is reported as a 5-point scale going from 1-5. Mean (SD) of 10-item ST subscale (14.85, 12.21) is inconsistent with minimum possible score (10).
Tehrani (2016)	126 (61)	Police, ICAC	United Kingdom	Multiple regression	ProQoL	ProQoL	-	C (5)	Insufficient description of outcome variables, nonresponse error could not be determined, did not account for power analysis, unclarities in presentation of statistical results hampers interpretation,
Weintraub (2016)	433 (49)	Neonatologists	United States	Logistic regression	CFST	CFST	.76	A (7/8)	Did not account for power analysis. Nonresponse error criterion close to pass, uses an adapted version of a validated outcome measure.

Note: Table is formatted to facilitate comparison to Cieslak et al., (2014). CPW = Child-protection workers. ICAC = Internet Crimes Against Children. [a]Cited from Cieslak et al., (2014). *N only referring to the sub-sample that were child-protection workers. Type of analysis reports the highest level of analysis done.

2.3.1. Individual factors

A total of 22 individual factors were investigated across the studies. Thirteen were demographics and background characteristics (age, sex, race, ethnicity, living location, marital status, children(N), education, experience, religion/spirituality, trauma-history, prior psychological diagnosis and salary), whereas the remaining nine were related to psychological and interpersonal factors (self-care strategies, coping, home support, reactions to disturbing media, locus of control, emotional self-awareness, resilience, general self-efficacy, interpersonal reactivity). A total of nine individual factors qualified for inclusion in the review: Age, sex, familial background, home support, experience, personal trauma, religion/spirituality, coping and self-care practices.

2.3.2. Organizational factors

A total of 31 organizational factors were investigated across the studies. Seven were descriptive in nature (job-type, job-role, size of department, level of patient-acuity, possibility for debriefing, work-hours, group work), and 18 described factors related to perceived working environment and individual relationship to the organization (organizational support, troubles at work, co-worker reliance, feelings of work-drain, turnover intentions, organizational satisfaction, low work-morale, work-load, role-conflict, control, predictability, mastery, leadership, organizational culture, work-life balance, work centrality, commitment, motives). Three covariates qualified for inclusion in the review: Job-type, job-role and organizational support. Job-type delineates different professions, job-role delineates employees from supervisors, and organizational support encompasses supervision and debriefing, as well as support from colleagues and supervisor.

2.3.3. Operational factors

The operational covariates related to different forms of exposure (direct/indirect), the age of the victims, ratio of exposure, time since exposure and number of exposures per week/month/ever and were investigated by seven studies (Brady, 2016; Fisackerly et al., 2015; Killian, 2008; McGarry et al., 2013; Perez et al., 2010; Perron and Hiltz, 2006; Weintraub et al., 2016). Two characteristics of secondary exposure to trauma qualified for inclusion in the review: Number of exposures and exposure-ratio. A total of 14 covariates qualified for review. Table 2 provides an overview of level of support for each covariate. All coefficients discussed below were significant at $p \leq .05$.

2.3.4. Covariates

Three studies reported age as a nonsignificant covariate of both outcomes (Baugerud et al., 2018; Brady, 2016; Robins et al., 2009), whereas age was negatively related to BO in two studies (Salloum et al., 2015, $\beta = -.27$; Sprang et al., 2011, $\beta = -.27$) and unrelated to BO in one additional study (Sprang et al., 2011). Conversely, age was related to ST in one study (Sprang et al., 2011, $\beta = -.30$) of social workers. McGarry and colleagues (2013) reported higher means of ST and BO for health-care professionals under the age of 25 but did not report whether the difference was statistically significant.

Table 2: Overview of support for and against covariates of burnout and secondary traumatisation

			Burnout		**Secondary traumatisation**	
			For	Against	For	Against
Individual	Age		Reasonable[Sal, Spr]	Reasonable[B, Bau, R]	Some[Spr]	Persuasive[B, Bau, R, Sal,]
	Sex		Some[Spr, T]	Persuasive[B, Bau, M, R, Sal, W]	Persuasive[B, Spr, T, W]	Persuasive[Bau, M, R, Sal]
	Familial background		None	Some[B, R]	None	Some [B, R]
	Home support		Reasonable[B, 1]	None	Reasonable[B, 1]	None
	Experience		Persuasive[1,2, Sal]	Persuasive[2, B, M, R]	Some[1]	Persuasive[2, B, M, R, Sal]
	Personal trauma		None	Some[B]	Some[B, K]	Some[W]
	Religion/spirituality		Some[Spr]	Some[B, R,]	Reasonable[B, Spr]	Insufficient[R]
	Coping		Reasonable[B, M]	Insufficient[K, R]	Some[M]	Some[B, K, R]
	Self-care strategies		Reasonable[Sal, W]	Insufficient[K]	Some[W]	Some[K, Sal]
Organisational	Org. support		Reasonable[Bau, B, F]	None	Some[B]	Some[Bau,]
	Job-type		Reasonable[R, Bal, Spr]	Some [M]	Reasonable Bal, Spr	Some [M, R]
	Job-role		None	Persuasive[B, R, Sal]	None	Persuasive[B, R, Sal]
Operational	Exposure	N	Some[B]	Reasonable[1, 2]	Some[B]	Reasonable[1, 2]
		Ratio	Some[2]	Reasonable[2, B]	None	Some[2, B]

Note: Results are based on the highest level of evidence from each study (e.g. if significant results from bivariate analysis become non-significant in multivariate analysis, the latter is included). [B]Brady, 2016; [Bal]Baldschun et al., 2017; [Bau]Baugerud et al., 2018; [F]Fisackerly et al., 2016; [K]Killian, 2008; [M]McGarry et al., 2013; [1]Perez et al., 2010; [2]Perron & Hiltz, 2006; [R]Robins et al., 2009; [Sal]Salloum et al., 2015; [Spr]Sprang et al., 2011; [T]Tehrani, 2016; [W]Weintraub et al., 2016.

BO was higher among women in law-enforcement personnel (Tehrani, 2016), whereas male social-workers reported higher levels of BO compared to women (Sprang et al., 2011, β = .18). Similarly, female law-enforcement personnel, social workers and doctors reported higher levels of ST (Brady, 2016, β = -1.26; Sprang et al., 2011, β = .18; Tehrani, 2016, β = -.19; Weintraub et al., 2016, odds-ratio 2.27). A considerable number of studies found no significant relationship between sex and ST (Baugerud et al., 2018; McGarry et al., 2013; Robins et al., 2009; Salloum et al., 2015) or BO, respectively (Brady, 2016; Weintraub et al., 2016 in addition to the studies cited above). Finally, having a personal history of trauma was not significantly related to BO (Brady, 2016) but related to ST in two studies (Brady, 2016, β = .84; Killian, 2008, β = .23)

Only two studies investigated familial background (marital and/or parental status) as covariates of BO and ST, and both studies reported a nonsignificant relationship (Brady, 2016; Robins et al., 2009). Two studies investigated home-support as a covariate and reported a statistically significant negative relationship to both BO and ST respectively among law-enforcement personnel (Brady, 2016, ST β = -1.31, BO β = -.85; Perez et al., 2010, ST r= -.50, BO-exhaustion r = -.49).

Experience working with trauma-exposed children was significantly and positively related to BO in three studies (Perez et al., 2010, cynicism r= .40; Perron and Hiltz, 2006 (disengagement, r= -.27); Salloum et al., 2015, β = .27), and a single study reported a significant positive correlation between experience and ST (Perez et al., 2010, r= .40). However, most studies reported non-significant relationships between experience and BO (Brady,

2016; McGarry et al., 2013; Perron and Hiltz, 2006 (exhaustion); Robins et al., 2009;) and ST, respectively (Salloum et al., 2015 in addition to the studies cited above).

Any religious participation or spiritual activities were negatively related to BO and ST in social workers (Sprang et al., 2011, β = -.20 to -.22 and β = -.13 to -.24 respectively), and religious coping was significantly negatively related to ST for law-enforcement personnel (Brady, 2016, β = -.87). One study conducted with health-care personnel reported nonsignificant relationships for spiritual beliefs to both outcomes (Robins et al., 2009). Positive coping was negatively related to BO (Brady, 2016, β = -.98), whereas non-productive coping was positively related to BO and ST (McGarry et al., 2013, r = .45 and r = .50 respectively). Three studies reported a non-significant relationship between coping and ST (Brady, 2016; Killian, 2008; Robins et al., 2009) and BO (Killian, 2008; Robins et al., 2009). General self-care strategies such as exercise, creativity, and reading were unrelated to both BO and ST among hospital personnel and therapists (Killian, 2008; Weintraub et al., 2016). Conversely, talking about distressing events was related to lower levels of BO (odds ratio = -.37) and ST (odds-ratio = -.31), and indicating that self-care was not a priority was related to higher levels of ST (odds-ratio = 2.97) (Weintraub et al., 2016). Trauma-informed self-care strategies was related to lower levels of BO (β = -.26) but not significantly related to ST (Salloum et al., 2015).

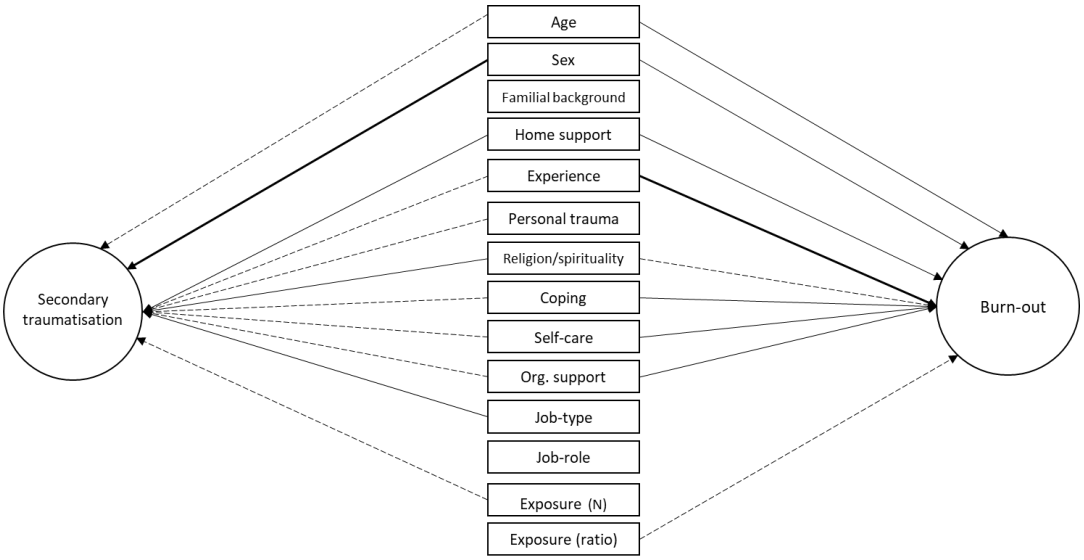
Organizational support was significantly related to lower levels of BO (t(151) = 4.02) but not ST among child-life specialists, whereas results for ST was not reported (Fisackerly et al., 2016). Organizational support was significantly, negatively related to BO and ST (Brady, 2016, β = -2.41 and β = -1.34 respectively).

Finally, organizational support was related to lower levels of BO only in social workers (Baugerud et al., 2018, β = -.11).

Of the studies comparing job-types, professionals working with children were at increased risk for ST and BO compared to professionals working with other populations (Baldschun et al., 2017, t(885)=-4.39 and t(885)= -6.07 respectively; Sprang et al., 2011, β = .27 and β = .36 respectively), and physicians were at higher risk of BO than nurses and mental health professionals when working with children (Robins et al., 2009). Conversely, the risk of BO and ST was undifferentiated between employees and supervisors (Brady, 2016; Roberts et al., 2009; Salloum et al., 2015).

Finally, three studies of law-enforcement personnel investigated number of exposures to traumatic material as a covariate of both outcomes. The number of indirect exposures to child-maltreatment cases was positively related to both ST (β = 1.29) and BO (β = 1.03), whereas direct exposures were not (Brady, 2016). Two studies reported non-significant relationships between number of exposures and both outcomes (Perez et al., 2010; Perron and Hiltz, 2006). Conversely, exposure-ratio displayed a significant relationship to disengagement, a facet of BO (Perron and Hiltz, 2006, t(57)= 1.98, p = .053), whereas two studies reported a non-significant relationship between exposure-ratio and BO (Brady, 2016) and exhaustion, another facet of BO (Perron and Hiltz, 2006), and ST, respectively (Brady, 2016).

Figure 3: Support for covariates of secondary traumatisation and burnout



Note: No arrow: None/insufficient evidence. Dotted arrow: Some evidence. Full arrow: Reasonable evidence. Bold arrow: Persuasive evidence.

Figure 3 summarizes the synthesised model of supported covariates of ST and BO. Overall, two persuasive covariates were identified: experience with BO, and sex and ST. Reasonable levels of evidence supported home-support, religion/spirituality and job-type as covariates of ST, whereas reasonable evidence support age, sex, home-support, coping, self-care, organisational support and job-type as covariates of BO. Some evidence supported a correlation between ST and age, experience, personal traumas, coping, self-care, organisational support, and exposure frequency. For BO, some evidence supported the covariates of sex, religion/spirituality, and exposure.

2.4. Discussion

The aim of the present review was to synthesise and compare evidence of covariates of ST and BO in professionals working with child-survivors of trauma. A total of 13 studies were deemed eligible for the present review. The majority of the included studies (10 out of 13) were conducted outside Europe. Overall, the strongest effects for individual covariates were reported for child-protection work, age,

experience, self-care strategies and religious participation. However, some psychometric limitations must be considered when interpreting the results in the present review. Three studies were unclear on methodological aspects of data-analysis and/or variables included in the studies (Fisackerly et al., 2016; Killian, 2008; Tehrani, 2016), and an additional study provided standardized regression coefficients larger than 1 (Brady, 2016). Additionally, child-protection work is a highly specialized field in some professions, and some studies investigating covariates of BO and ST in law-enforcement personnel and medical personnel was conducted with small sample-sizes, and only few studies accounted for power analyses. Nine out of thirteen studies operationalised both BO and ST within the professional quality of life (ProQoL)-framework. While ProQoL is the most widely used psychometric tool in research on the impact of working with traumatised populations (Isdal, 2017), it has been criticised for its' psychometric properties and construct validity (Hemsworth et al., 2018) as well as limited practical utility in operationalising BO and ST as separate constructs due to lack of discriminant validity (Cieslak et al., 2014). Specifically, studies investigating differences in covariates of ST and BO while operationalising both outcomes using the ProQoL framework might find a greater number of overlapping factors than studies operationalising the outcomes using different theoretical frameworks. One alternative measure of ST was used by two studies in the present synthesis (Secondary Traumatic Stress Scale, Bride et al., 2004; Perez et al., 2010; Perron and Hiltz, 2006). Differences in significant covariates across different operationalisations of ST is currently inconclusive

and warrants further research that employs alternative measures of ST or BO to further elucidate the overlap in predictive models of the outcomes.

Fourteen covariates met the inclusion-criteria: Age, sex, familial background, home support, experience, personal trauma, religion/spirituality, coping, self-care, organizational support, job-type, job-role, and characteristics of exposure. While the strength of evidence for discrete covariates varied according to the levels of evidence approach (Miller and Thoresen, 2003), all covariates were related to both outcomes with the exception of personal trauma that covaried only with ST, exposure-ratio that covaried only with BO, and familial background, and job role that covaried with none of the outcomes. Albeit theoretical accounts of BO and ST underline the importance of organizational and operational stressors respectively, there was an overrepresentation of demographic and descriptive covariates in the literature. Exposure-ratio has previously been found to correlate with ST in a meta-analysis of 38 studies of risk-factors in therapeutic work with trauma survivors (Hensel et al., 2015), and considering that both studies that failed to find a correlation between exposure ratio and ST in the current study were conducted among police officers, this might suggest that risk of secondary traumatisation due to exposure differs across professional tasks, or it might be an artefact of methodological differences pertaining to assessment of exposure.

Similar evidence-profiles emerged for four covariates with no support for neither familial background, job-role, reasonable evidence for home support and some support for exposure frequency. Hence, the specific nature of one's familial background was unrelated to BO and ST. Rather, feeling supported by one's family was protective against both conditions, a finding reiterated in qualitative studies (Killian, 2008; Perez et al., 2010). However, while families and friends are a source

of support for employees working with child-survivors of trauma, the nature of the job might affect the availability of support with work-family conflict cited as a significant predictor of BO and the strongest predictor of ST in a study of Norwegian child-protection workers (Baugerud et al., 2018). As previously reported, exposure-factors are inconsistently related to ST (Sage et al., 2018), and notably, there was slightly more evidence to support the correlation between BO and exposure factors in the present literature review. Additionally, trauma-informed self-care strategies was negatively related to BO and non-significantly related to ST (Salloum et al., 2015), further extending the finding that some trauma-related factors might be non-specifically related to ST (Elwood et al., 2011). There was no difference across employees and supervisors on BO and ST, whereas child-protection workers reported higher levels of BO and ST. However, this was contrasted by a study of specialised child-protection workers reporting one of the overall lowest levels of BO in the included studies (Baugerud et al., 2018), suggesting that working with child abuse survivors alone is insufficient to account for the occurrence of BO and ST.

Taken altogether, neither demographics (marital and parental status) and overall operational characteristics (exposure, job-role) seem particularly well-suited as predictors of BO and ST. This is consistent with theoretical accounts of ST and BO (Figley, 1995; Maslach et al., 2001), and suggest that other factors account for the relationship between working with child-survivors of trauma and reduced occupational well-being. Individual coping and self-care strategies are frequently discussed as potential mediators of the impact of organizational and operational stressors (Brady, 2016; Killian,

2008; McGarry et al., 2013; Robins et al., 2009; Sage et al., 2017; Salloum et al., 2015; Weintraub et al., 2016). Studies in the present review found that several strategies are effective in managing the stress of child-protection work (Brady, 2017; McGarry et al., 2013, Weintraub et al., 2016). However, from the cross-sectional design of the current studies and limited assessment of organizational factors, it is effectively impossible to determine the directionality of the effect and to what extent the use of different coping-strategies reflects individual tendencies and/or a lack of resources and better options for support in the organization. A study of the timewise relationship between BO and ST in military health-care providers showed that BO precipitated ST (Shoji et al., 2015), suggesting that the build-up of chronic stressors might increase the vulnerability for ST. Consequently, over-individual factors such as high work-loads or lack of support that contribute to the accumulation of stressful episodes with limited restitution time and options to process the experiences might be better predictors of the development of lasting distress than employees' use of particular coping- or self-care strategies. Indeed, work support and social support displayed some of the largest negative correlations to secondary traumatisation in a recent meta-analysis (Hensel et al., 2015).

While some covariates in the present review were reasonably supported by available evidence, conflicting findings regarding the significance of even persuasive covariates across studies were the rule rather than the exception. This might be ascribed to error in sample statistics related to study design but might also be taken to suggest that the salience of different covariates vary across organizational circumstances and/or professions as previously suggested (Cieslak et al., 2013). More research is needed to explore these inconsistent findings.

2.4.1. Limitations

The search-strategy employed relied on peer-review- and language filters in the databases. Based on the final screening of papers, some studies had been labelled as peer-reviewed studies while they were in fact letters to the editor or reviewed only by editors of the respective journals. It can therefore not be guaranteed that studies of relevance to the present review have been erroneously excluded in the search- and screening process. Due to our selection of databases, studies that were not listed in these have been prematurely excluded. The quality assessment was adapted from a tool for observational and cross-sectional studies (NIH, 2019) and focused narrowly on quality of the aspects of the studies relevant to the current review (aspects of quantitative data-collection and analysis). Hence, some studies given a low rating in the current review might qualify for a higher rating when considering other aspects such as novelty and the application of mixed methods that was beyond the scope of the current quality assessment.

2.4.2. Conclusion and implications

This review investigated covariates of burn-out and secondary traumatisation in employees working with child-survivors of trauma. Some individual and operational factors were equally related to burn-out and secondary traumatisation and thereby not particularly well-suited to differentiate between the outcomes. Similarly, the strongest effects were reported for age, experience and child-protection work, but there was a predominance of mixed evidence for and against the salience of discrete covariates as well as an over-representation of demographic factors over organizational and operational factors. Generally, our ability to extract firm conclusions regarding the covariates of burn-out and secondary

traumatisation is limited by the high diversity of the studies where many covariates were researched by only one study and thereby not included in the present review. However, there was evidence to suggest that trauma-related factors were equally or more related to burnout than secondary traumatisation, suggesting a need for further investigation of the nature of the empirical overlap of the outcomes. Assessing the degree overlap in the constructs as well as in their predictive models would yield valuable knowledge for designing organizational interventions to prevent the development of BO and ST in child-protection work. Future research assessing the overlap in predictive models of burn-out and secondary traumatisation would benefit from integrating covariates supported in the work- and organisational literature with covariates from the literature in psychotraumatology.

2.5. Update of the systematic literature review

The literature review was commenced in March 2018 and was submitted to The British Journal of Social Work in December 2018 where it was accepted for publication in September 2019 following three rounds of peer-review. The content of the review is however already outdated as the latest literature search conducted was in June 2018. The purpose of the current section is to survey the published literature for studies that have been published since the conduction of the literature search for the published study and to provide a narrative review of relevant recent research. The search matrix from the published literature review was repeated for the 7 databases restricted to the years 2017-2019, resulting in a total of 4461 hits across the databases (Web of Science: 956, PILOTS: 22, Science Direct: 59, Scopus: 715, PsycInfo: 200, Embase: 206, PubMed: 154). Hence, it appears that Web of Science contains the most extensive bibliography on the topic to date. After removing duplicates, 1558 hits remained that was screened for relevance on title and abstract in

accordance with aforementioned inclusion and exclusion criteria by the ph.d.-candidate. 24 articles were extracted for further review, and out of these, four were selected for full-text review due to their apparent endorsement of the inclusion criteria. These were Chung & Choo (2019), Hopwood, Schutte & Loi (2019) Salloum, Choi & Stover (2019) and Seigfried-Spellar (2018). Table 3 specifies details of the studies. Upon full text review of the studies, neither investigated covariates of burnout and secondary traumatisation in a way that allowed for comparison of the relative relationship to the outcomes. Rather, secondary traumatisation was investigated as predictor of burnout (Chung & Choo, 2019; Hopwood et al., 2019), secondary traumatisation and burnout were investigated as predictors of general mental health status (Salloum et al., 2019) and burnout was not investigated at all (Seigfried-Spellar, 2018). However, as these studies represent the forefront of research in the area of secondary traumatisation and burnout among child protection workers, a brief review of their findings are provided below.

Table 3: Studies included in the narrative synthesis

Study (first author, year)	N (% males)	Occupation	Country	Type of analysis	ST (M, SD)	BO (M, SD)	r
Chung (2019)	268 (41.8 %)	Child protection workers	South Korea	Multivariate analysis, Mediation	STSS (NR)	MBI (NR)	NR
Hopwood (2019)	48 (37,5 %)	Youth workers	Australia	Moderated mediation	ProQoL-5	ProQoL-5	.68**
Salloum (2019)	184 (23 %)	Child protection workers	USA	Mediation	ProQoL-5	ProQoL-5	.71***
Seigfried-Spellar (2018)	129 (81 %)	ICAC, 'regular' investigators	USA	Logistic regression	PCL-C	None	-

Note: NR: Not reported. **p<.01, ***p<.001.

Chung & Choo (2019) aimed to further the understanding of intent to leave among child protection workers in South Korea in the largest sample among the four included studies that had a response rate of 93.9 %. The authors tested a 4-level

model whereby organizational risk- and protective factors such as role ambiguity, -conflict and -overload, safety concerns represented risk-factors in addition to secondary traumatisation and depressive symptomatology, and supervisor-rapport, resilience and pro-social behaviour represented protective factors. These were taken to predict job satisfaction (level 2), burnout operationalised as emotional exhaustion and sense of personal accomplishment (level 3) and intent to leave (level 4). The authors expected statistically significant direct effects and indirect effects through all levels of the model and found that role-overload, safety concerns and secondary traumatisation increased intent to leave indirectly through the effect of emotional exhaustion, whereas rapport with supervisor directly mitigated intent to leave. However, job satisfaction displayed no effect on intent to leave. The authors conclude that prevention of emotional exhaustion through alleviation of stressful working conditions and increased supervisor rapport will be important preventive strategies against turnover in child protection work (Chung & Choo, 2019). Role-ambiguity showed the second strongest relationship to intent to leave after rapport with supervisor. The manuscript was unable to provide any further information on the risk-profiles of burnout and secondary traumatisation as the authors included no correlation matrix. In addition, the relationships between secondary traumatisation and emotional exhaustion ($\beta=.17$, $p<.01$) and sense of personal accomplishment ($\beta=-.18$, $p<.01$) were small, as was the indirect effect of secondary traumatisation through emotional exhaustion ($\beta=.09$, $p<.01$).

Hopwood and colleagues (2019) investigated the mediating role of anticipatory traumatic reactions in the relationship between secondary traumatisation and burnout. Anticipatory traumatic reactions (ATR) delineate a new concept for reactions to secondary trauma-exposure and describes ‘future-focused distress’

stemming from media reports and social discussions of disasters or large-scale negative events (Hopwood, Schutte & Loi, 2017; 2019). The authors explored the relationship between ATR, general distress and secondary traumatisation in predicting levels of burnout in mediation, moderation and moderated mediation analyses. A mediation analysis suggested that general distress mediated the relationship from secondary traumatisation and burnout, whereas a moderated mediation analysis suggested that ATR moderated the relationship between secondary traumatisation and general distress. The authors conclude that general distress might help explain the relationship of secondary traumatisation to burnout, and that high ATR might exacerbate general distress, thus increasing the risk of developing burnout (Hopwood et al., 2019). Inspecting the correlation matrix, it appears that secondary traumatisation and burnout are correlated stronger with each other (.68, $p<.01$) than with ATR ($r=.48$, $p<.01$ and $r=.35$, $p<.05$, respectively). Additionally, general distress displayed a significantly higher correlation to secondary traumatisation ($r=.7$, $p<.01$) and burnout ($r=.77$, $p<.01$) than ATR (.53, $p<.01$, Hopwood et al., 2019).

Salloum and colleagues (2019) investigated the mediating effect of trauma-informed self-care strategies in the relationship between secondary traumatisation and burnout as predictors and the mental health component of SF-12 as outcome. Using SEM to test the mediation effect, the authors found that personal self-care mediated the relationship between both outcomes and general mental health, and that organisational resources mediated the effect of secondary traumatisation, but not burnout. The latter finding is anomalous, as the correlation between secondary trauma and organisational resources is statistically nonsignificant ($r=-.05$) in bivariate analyses. The study follows on from Salloum and colleagues (2017)

included in the published literature review where authors validated the measure of trauma-informed self-care strategies employed in the study presently discussed. The authors conclude that self-care practices in child protection work are critical and that more research is needed on the protective effect of trauma-informed training, supervision and support among these workers (Salloum et al., 2019).

Finally, Seigfried-Spellar (2018) conducted a comparative study among ICAC personnel, law-enforcement investigators and employees with a combined position exploring the psychological well-being and coping efforts across these types of positions. ICAC personnel are charged with digital forensic examination of child pornography, whereas law-enforcement investigators are interacting with victims and offenders in the cases, for example to collect statements or additional evidence. Participants who had dual roles scores higher on secondary traumatisation, feelings of worthlessness and lower on concentration compared to digital forensic examiners only, and the authors conclude that obtaining this dual role is not in the best interest of the employee and that mental health services should be mandatorily provided by agencies. The author did not examine levels of burnout.

2.6. Conclusion

Overall, the number of hits across the systematic literature searches suggest that research on occupational well-being among human service workers is burgeoning. However, research discerning the role of organisational and operational predictors of burnout and secondary traumatisation among child protection workers is relatively scarce compared to research on individual factors such as self-care strategies, coping strategies and more recently, individual tendencies towards anxious anticipation of the future as indicated by ATR (Salloum and colleagues, 2019). Research identified for the systematic literature review employed a sum score

approach in their analysis of the relationship between covariates and secondary traumatisation. Particularly more recent research on burnout and secondary traumatisation has displayed an increased sophistication in statistical analyses employed with efforts to identify mediating and moderating factors relating secondary traumatisation and burnout to general well-being (Hopwood et al., 2019) and turnover-intentions (Chung & Choi, 2019). However, these studies still employed a sum-score approach that is uncorrected for measurement error to investigate their hypotheses, meaning that it is unclear to what extent any true relationship might be attenuated by uncorrected measurement error.

All studies included in the systematic and narrative review were cross-sectional in nature, and there continues to be a dearth of longitudinal research on the development of these condition. Both Chung & Choo (2019) and Hopwood and colleagues (2019) predicate their studies on the underlying assumption that secondary traumatisation leads to burnout, whereas available longitudinal research have found a reverse causal relationship in samples of military mental health service providers from Poland and USA (Shoji et al., 2015), which suggests that an integration of research in the development of secondary traumatisation and burnout across professional groups are lacking.

Finally, while Seigfried-Spellar (2018) did not investigate burnout as part of her study, it did provide preliminary evidence that having multiple role-responsibilities such as being both case-investigator and forensic examiner in cases of suspected sexual abuse of children increased the risk of secondary traumatisation, suggesting that organizational factors such as role-clarity or role-conflict might impact the risk of developing symptoms of secondary traumatisation. However, more research on the nature and extent of organizational predictors of secondary

traumatisation is needed to support this claim along with statistical techniques that allows for the control of measurement error. This will be integrated foci of the empirical study described in the subsequent chapter.

Chapter 3:
Methodology

Abstract

The present chapter details the methodological approach applied in addressing the aims of the thesis. This includes the design of a nation-wide survey based on field work in the Danish Children Centres as well as considerations on the strengths and limitations around applying survey methodologies in the population of interest under suboptimal conditions for contacting professionals belonging to the target population. The final sample consisted of 760 participants out of which 670 participants had completed either of the two primary outcome measures. The measures and sample characteristics of the survey is introduced and considerations regarding ethics and protection of participants during data-collection is reflected upon.

Contents

3.1. Introduction

The aim of this chapter is to provide an overview of the methods used throughout this study. Data collection was conducted through an online multi-site survey. To address the first deliverable of this study, developing a psychological model of secondary traumatisation and burnout, an online questionnaire was distributed to Danish child protection workers. A total of 760 respondents enrolled in the survey out of which 670 participants responded to a minimum one of the primary outcome measures of burnout or secondary traumatisation. Data were collected from July to December 2018. Section 3.2 will further detail the survey procedures, setting and content of the survey as well as characteristics of the participants and the analytical strategy. Finally, the chapter will conclude with a discussion of strengths and limitations of the study as well as ethical considerations and the data protection strategy employed in the study.

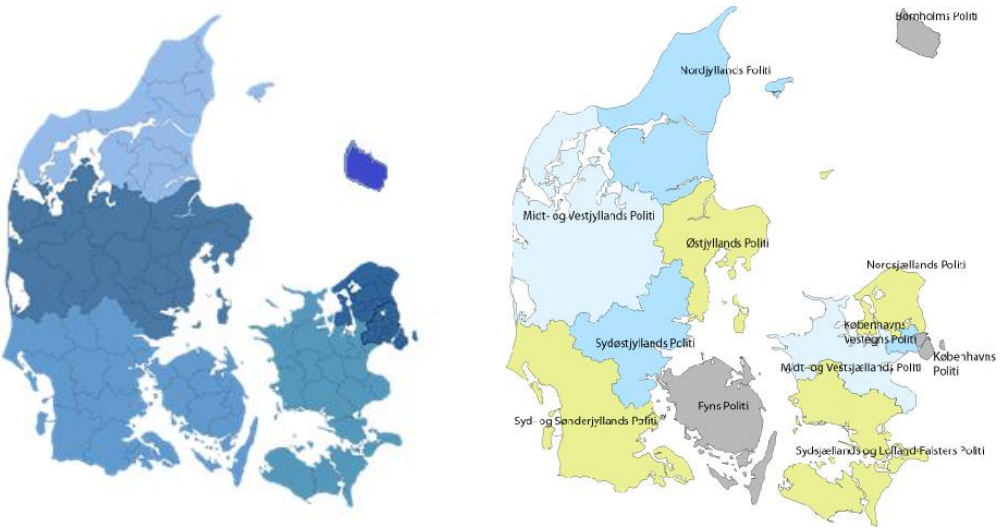
3.2. Survey

The primary purpose of the survey study is to develop a psychological model of the risk and protective factors of burnout and secondary traumatisation among Danish child protection workers. This section further outlines the setting, design, procedure and content of the survey.

3.2.1. Setting and target population: The Danish Child Protection System

As the purpose of the survey is to investigate the prevalence and associated risk and protective factors of secondary traumatisation and burnout among Danish child protection workers, a brief review of the child protection system is warranted to identify relevant professional groups that will comprise the target population of the survey. Figure 4 displays the geographical structure of the public welfare system in Denmark.

Figure 4: The structure of the public welfare system in Denmark



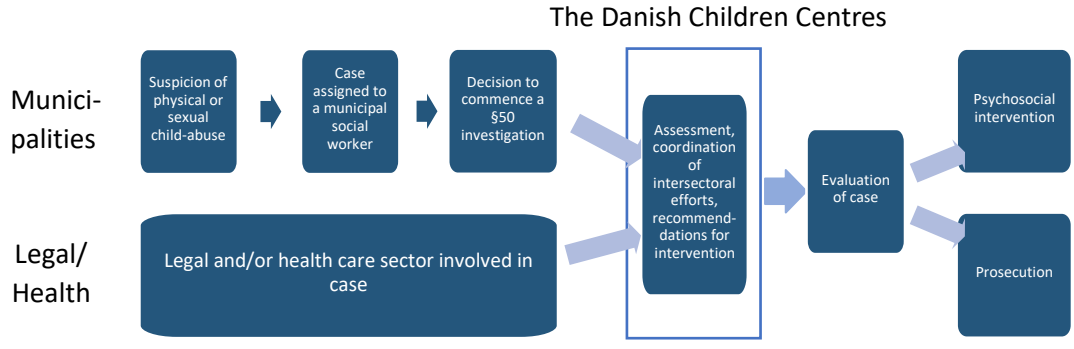
Note: On the right: The regional and municipal structure of Denmark (the social sector and health-care sector). On the left: The police-districts of Denmark (the legal sector). (Pictures retrieved from: www.denoffentlige.dk, www.politiparat.dk). The island of Bornholm is part of the capitol region of Denmark.

The Danish child protection system is comprised of a flexible cross-sectoral collaboration between professionals from the social sector, the legal sector, and the health care sector as illustrated in Figure 4. The social sector includes the 98 municipalities of Denmark and the Danish Children Centres based in the 5 regions of Denmark. The municipalities have the decisional authority in cases of suspected child abuse, and a Danish Children Centres supports the municipalities in cases of suspected child abuse depending on which region the municipality belongs to. The legal sector includes the 12 police districts that are charged with conducting forensic interviews in cases of suspected child abuse, securing forensic evidence and prosecuting the cases when warranted. Additionally, the child protection system includes the assistance from paediatricians from the health care sector in hospitals that are regionally founded.

Overall, the municipalities hold the responsibility for intervening in cases where the psychosocial well-being of children or youth are at risk. When the

municipalities become aware of cases of suspected child abuse, a thorough assessment of the child's developmental conditions can be commenced by a municipal social worker ("the paragraph (§) 50 investigation" in the Danish Law of Social Service). The §50 investigation encompasses a thorough mapping of the child's life-circumstances including for example the overall well-being of the child and characteristics of its home and school environment and provides the legal basis for sharing information across the sectors. The aim of the assessment is to identify potential individual and/or family-related sources of distress that will guide interventions aimed at supporting the child's healthy development. If the conclusion of the assessment states that the child has special support needs, the local authority is obliged to initiate the relevant interventions (Ministry of Social Affairs, 2011). Once the municipalities have decided upon conducting a §50 investigation and another sector (legal or health-care sector) are involved in the case, municipalities are legally obliged to refer the case for specialised assessment and coordination in the regional Children Centre. Figure 5 illustrates an example of the processing of a child protection case in the Danish system.

Figure 5: Simple outline of processing of child abuse cases in Denmark



Hence, the target population for the current project is Danish child-protection workers employed in the Danish Children Centres, a Danish municipality, a Danish police district or a hospital that work with survivors of child-abuse, meaning that all

professionals working with survivors of child-abuse as part of their job-function in either sector are part of the target population. It was not possible to establish contact to the hospital-based professionals, meaning that remainder of this section details the recruitment of participants from the remaining sectors.

3.2.2. Design

3.2.2.1. Mode of delivery

As the target population of the survey were child protection workers employed in three sectors across all of Denmark, there was a need for a feasible procedure in terms of reaching a large number of potential participants under the restrictions imposed by the nature of the project where time and resources for collecting and entering data were limited. One of the advantages of internet-based surveys is the possibility to reach many potential participants in the target population simultaneously or within a relatively short time-period and at a low cost (Groves et al., 2009). Consequently, this was the chosen format for the current study, meaning that a number of disadvantages of online surveys had to be addressed. These include a lack of exhaustive sampling frame, potential differences among respondents in computer systems and browsers available, and typically low response rates (Groves et al., 2009; Czaja & Blair, 2005).

Sampling frames used for the current study will be discussed under section 3.2.3. The potential differences among participants in available computer systems and browsers available were considered to be a minimal threat to the current survey as child protection work in any sector is extensively supported by the use of computers for communication and record-keeping. Low response-rates on the other hand was considered a major threat to the current survey as a meta-analysis has shown that response-rates in online surveys are on average 11 % lower than response rates in other types of survey modes (Manfreda, Bosnjak, Berzelak, Haas, &

Vehovar, 2008). Several factors have been suggested to be of importance in understanding the fluctuation of response-rates such as perceived relevance and length of survey (Groves et al., 2009). Fan and Yan (2010) have summarized the evidence for factors affecting survey-response in four phases pertaining to development, delivery, completion and return of the survey. Most research has been conducted on the development and delivery of surveys, particularly focusing on the content and presentation in the development phase and on sampling, invitations, reminders and incentives in the delivery phase. Specifically, participation rates tend to be higher when the survey is delivered by an academic institution and when the topic is important to the participants, whereas the length of the survey is linearly negatively related to response rates (Fan & Yan, 2010).

On the topic of survey delivery, personalised invitations and reminders have generally been found to increase participation rates, and employee populations are generally more prone to participate in surveys than the general population (Fan & Yan, 2010). However, the degree of personalisation of the invitations might both affect the response rates and the validity of responses negatively: While generic personalisation such as adapting the salutation to the recipient, mentioning recipients' job title, and personalising the senders are significantly related to response rates (Heberlein & Baumgartner, 1978; Yammarino et al., 1991), individually personalised invitation (for example using first and last name in invitation letter) have been found to be statistically insignificantly related to response rates (Pearson & Levine, 2003; Porter & Whitcomb, 2003) and in some cases found to induce a social desirability bias in responses to sensitive questions (Heerwegh, Vanhove, Matthijs, & Loosveldt, 2005).

Based on these findings, development aspects were a minor concern for participation rates in the current survey as it is delivered in a collaboration between two academic institutions and the Danish Children Centres on the topic of occupational well-being of the participants themselves. However, the relevance of the survey might reasonably be expected to be higher for employees in the Danish Children Centres than for municipal and police employees as a delivery of the project is benefitting themselves directly. Additional efforts were made to inform and engage professionals employed outside the Danish Children Centres in the topic of the survey through presentations in relevant forums to increase participation rates in the survey. Additionally, the shorter the survey the better in terms of participant completion rates (Fan & Yan, 2010), and as the duration of the current survey was approximately 30 minutes, additional efforts were also made to ensure the participation and commitment of employees in the Danish Children Centres through presentations and discussions delivered throughout the project period. Consequently, the survey was designed through an integrated bottom-up and top-down approach akin to patient and public involvement (PPI) procedures of conducting and designing research projects (McNichol & Grimshaw, 2014). The bottom up approach aimed to engage professionals from all sectors in the survey and to ensure the relevance of the content in the context of the Danish Children Centres. In contrast, the top down approach aimed to ensure the relevance of the survey in the context of the current research on risk factors for secondary traumatisation and burnout.

3.2.2.2. Survey development

The top-down approach to selection of questionnaires was based on the literature review of risk- and protective factors of burnout and secondary traumatisation summarized in chapter 1 and 2 and a supplementary review of

questionnaires available for operationalisation of the constructs of burnout and secondary traumatisation. The measures were chosen to allow for a comprehensive exploration of the relative importance of operational and organizational risk-factors for secondary traumatisation and burnout, and to explore the clinical relevance of secondary traumatisation and burnout through their relationship to functional impairment and other common mental health disorders whose clinical significance is well-established such as depression, anxiety and PTSD. This strategy was chosen based on two related considerations, a theoretical and a practical.

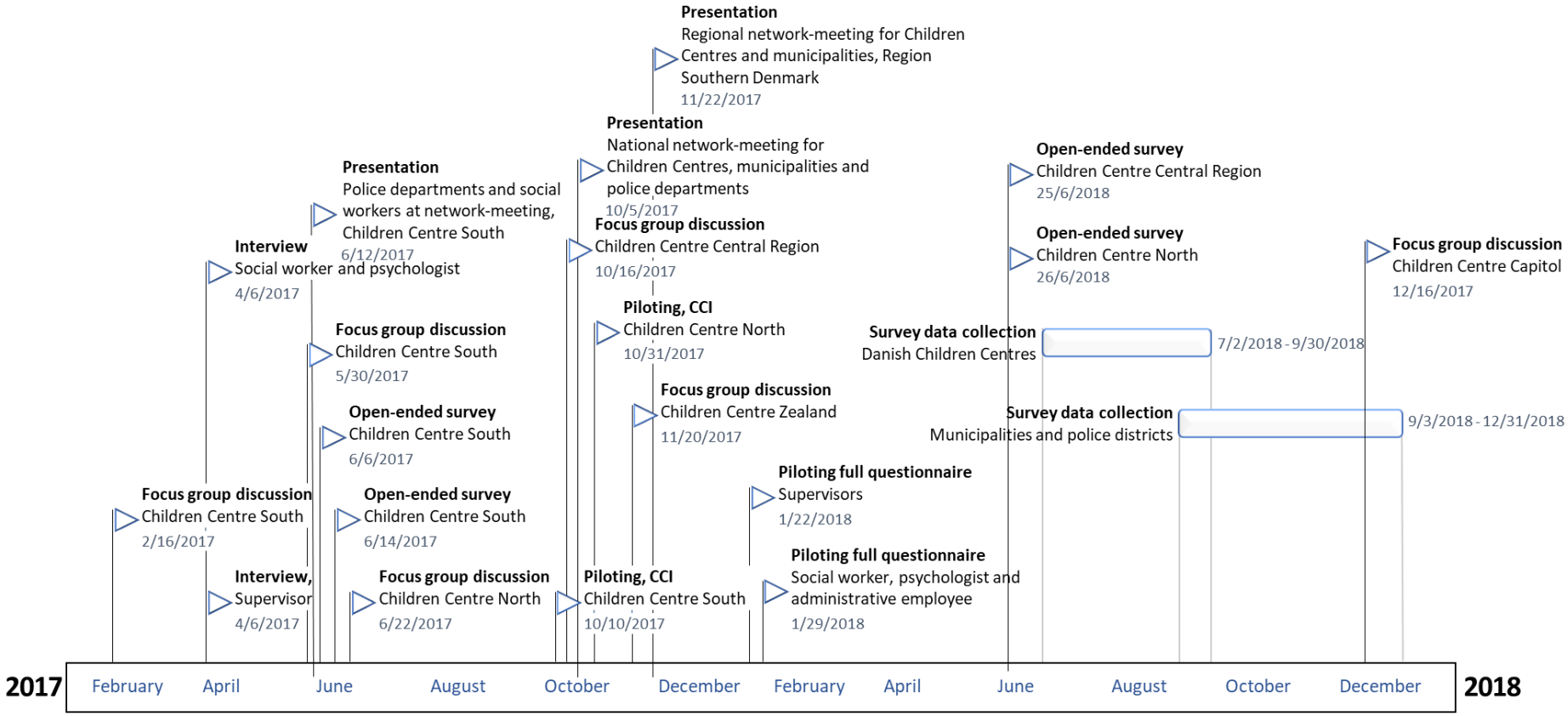
Regarding the theoretical considerations, the severity and clinical relevance of secondary traumatisation is still poorly understood, and a further exploration of the relationship between secondary traumatisation and other indicators of common mental health disorders would make an important contribution to the international literature. Regarding the practical considerations, it appears that this is the first larger survey to assess secondary traumatisation in a large sample of Danish child protection workers, meaning that there are no national norms or population statistics available for comparison to aid interpretation of results from the current study. An important deliverable of the current project is to provide recommendations towards the prevention of secondary traumatisation and burnout in the Danish Children Centres, and therefore, the ability to approximate the clinical relevance of levels of secondary traumatisation and burnout reported is pivotal. This will be accomplished through reference to the measures of functional impairment and common mental health disorders.

In addition to the top-down approach, the bottom-up approach aimed to adapt the survey to the context of the Danish Children Centres. This served several purposes. First and foremost, the procedure served to ensure the relevance of the

outcomes and risk- and protective factors investigated in the context of the Danish Children Centres, thereby enhancing the applicability of the recommendations derived from the study. Additionally, it enhanced the buy-in to the project from employees in the Danish Children Centres and from employees in the municipalities and police districts, thereby facilitating higher participation rates than would be expected had the survey been driven solely by a top-down approach. The bottom-up approach consisted of focus group discussions, presentations, interviews and a brief, open-ended survey with employees in the Danish Children Centres before the final tailoring of the questionnaire. Figure 6 displays an overview of the process.

Focus group discussions were conducted by the researcher (MLV) with employees from the Danish Children Centres either during a weekly staff-meeting or during a scheduled meeting about the project. The discussions were preceded by an introduction of the researcher, the aim and design of the project, and concluded with an open question encouraging the employees to share their thought on the topic, particularly relating to the perceived relevance of the study and their experiences of working with survivors of child abuse. The discussions served the dual purpose of introducing and engaging the employees in the project, as well as allowing for developing an understanding of the perceived impact of working with survivors of child abuse from the perspective of the employees. Overall, the focus group discussions lasted between 45 minutes 1.5 hours. Four out of five group discussions were conducted from February 2017 to November 2017, and one discussion was conducted in December 2018 due to scheduling difficulties.

Figure 6: Timeline for focus group discussions, presentations, interviews and preliminary surveying in the survey phase design



Note: CCI: Children Centre Inventory. This is further detailed in section 3.2.2. under 'Exposure'.

Presentations were given in June 2017 to November 2017 to employees outside the Danish Children Centres. This included local network meetings between a single Children Centre department and supervisors in the police districts and municipalities collaborating with this Children Centre, a regional network meeting between all municipalities and children centres in Region Southern Denmark, and a national network meeting between all municipal departments, police districts and hospitals and Children Centres in Denmark.

Interviews were conducted with a supervisor of a Danish Children Centre, and jointly with a psychologist and a social worker employed in the Danish Children Centres. The purpose of the interview with the supervisor was to further the understanding of the organizational structure of the Danish Children Centres. As the Children Centres are a major stakeholder in the project, a simultaneous aim was to explore their motivation for participating in the project and expectations for the outcome. This provided a baseline understanding and served as a shared point of reference for further discussions around the focal points of the survey as the project developed. The purpose of the interview with the social worker and psychologist employed in the Danish Children Centres were to further the understanding of division of labour between the disciplines and extent of cross-disciplinary collaboration on the cases referred to the Danish Children Centres as well as the procedures for working with survivors of child-abuse in the Danish Children Centres. The interviews were conducted in April 2017. Finally,

A brief, open-ended paper-and-pencil survey was conducted among employees in three Danish Children Centres specifically focusing on aspects of their working day they considered strenuous and those that were considered energizing. The survey was conducted across four meetings in a Danish Children Centre with the

purpose of mapping factors of importance for occupational well-being in everyday life from the perspective of the employees. Data collected from the survey were content-analysed and sorted into pre-specified categories based on the types of risk-factors studied in the current literature: 1) Case-related themes (for example children's traumatic experiences and developmental conditions), 2) Organisation-related themes (for example, high workload, time-pressure, influence, supervisory relationships, collaboration with municipalities, police departments or hospitals), and 3) Individual themes (experience, self-care strategies). Most of the content reflected factors that have previously been operationalised and investigated using validated measures. They were therefore readily subsumed under the measures identified using the top-down approach. The remaining themes formed the basis for a measure operationalising indirect exposure to trauma or stressful and energizing experiences in a Danish child protection context called the "Children Centre Inventory". The development of this is further detailed under section 3.2.4. and presented at the International Society for Prevention of Child Abuse and Neglect conference in The Hague, The Netherlands, 2017 (see appendix 7.6). Finally, different language version of the survey was developed to distribute to professionals in the Children Centres, the Police service and the municipal social workers to accommodate the jargon and type of engagement with child survivors of abuse across different professions. The content and formulation of the survey questions are further elaborated on in section 3.2.4.

3.2.3. Recruitment strategy

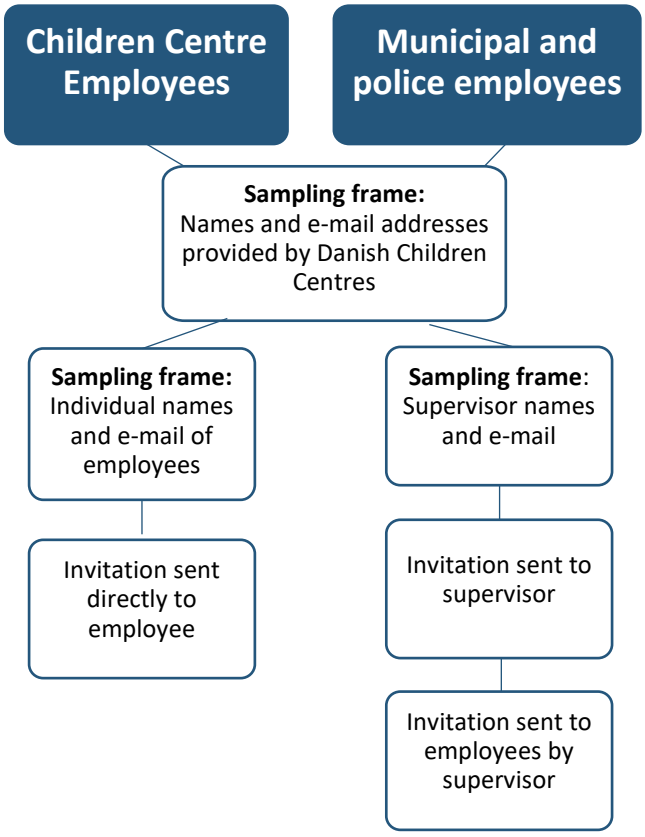
As there are no Danish national registries of child protection workers, a central challenge in the current survey was transitioning from target population (e.g. the population to be made inferences about using survey statistics) to frame

population (e.g. the population with a chance to be selected into the sample) (Groves et al., 2009). Participants for the current study were eventually recruited through the Danish Children Centres using two sampling frames (e.g. lists of eligible units in the target population, Groves et al., 2009).

The first sampling frame covered employees at the Danish Children Centres and consisted of records of employee names and emails that were obtained through the supervisors at the Danish Children Centres. This sampling frame was controlled by the researcher and invitations to participate in the survey were distributed by the researcher directly to the employees. The second sampling frame covered professionals employed in the municipalities or police districts where lists of employees' names and emails were not readily accessible. In these cases, records of names and email addresses of supervisors of municipal departments and police districts collaborating with Children Centres in each region were obtained through supervisors at the Danish Children Centres and served as sampling frame for the municipalities and police districts. Due to a high level of decentralization in the Danish public sector, local authorities have high autonomy in terms of organizing and delivering social services (Ministry of Social Affairs, 2011), meaning that it was infeasible to rely on requesting contact information for a prespecified list of professional groups from the supervisors of the municipalities and police districts to aggregate a sampling frame controlled by the researcher. Instead, the sampling procedure depended on the supervisors' access to the internal list of employees in the individual departments and their inside-knowledge of relevant professionals for the purpose of the study. Consequently, the local supervisors were relied on to distribute the invitation to participate in the survey to their employees, provided that they opted to enrol their department in the survey. In total, there were 5 Children Centres, 98

municipalities and 12 police districts in Denmark at the time of the survey, yielding a total of 115 administrations across the sectors eligible for participation with an unknown total number of employees eligible. Figure 7 displays the sampling procedures.

Figure 7: Sampling frames for the Children Centre employees and municipal or police employees



Three overall sampling frames were identified for the current survey: A list of Children Centre employees, a list of supervisors of the municipal departments and a list of supervisors of the police districts. The intention of the current study was to select participants based on probability sampling whereby all participants have a known nonzero chance of selection into the survey (Groves et al., 2009). This were to be completed by using a simple random sampling procedure whereby all participants had an equal probability of selection into the survey from the frame

element to which they belonged (Groves et al., 2009). However, due to the restrictions on sampling procedures incurred by the lack of detailed sampling frame for municipal and police employees, the current survey used a combination of simple random sampling for Children Centre employees and cluster sampling for recruiting municipal and police employees, whereby employees were sampled on department-basis. Cluster sampling is a procedure by which participants of the target population are sampled on a group-basis instead of an individual basis and is usually used in cases where there are no exhaustive sampling frames available or in cases where the target population is geographically widespread (Groves et al., 2009).

Recruiting participants was completed in two ways depending on their professional group. As supervisors of the Danish Children Centres had already consented to enrolling their departments in the survey upon providing the sampling frame, employees from the Danish Children Centres were sent an invitation to the study directly via e-mail. For municipal departments and police districts, recruitment proceeded in two linked stages: First, supervisors of all administrations were contacted via e-mail with an invitation for department to participate in the survey. Any follow-up questions or requests for further information was accommodated via email or telephone from the researcher (MLV). Contact information, dates of contact and brief notes relating to the topic of the contact as well as consent and decline to participate was recorded consecutively. The invitation was circulated thrice over the course of three weeks at which stage any absence of reply was taken as a decline to participate. If supervisors agreed to enrol their department in the survey, supervisors were instructed to forward an invitation to all staff involved in child-protection work in their department. Municipal employees were invited to participate if their function included the potential for working with child survivors of physical or sexual abuse,

whereas the actual exposure to these cases was assessed in the survey. The invitation to the employees regardless of place of employment was circulated twice to ensure maximum number of participants in the survey. Table 4 displays the number of potential and actual participating departments.

Table 4: Potential and participating departments across the Danish municipalities, police departments and Children Centres

	N Departments	N Contacted	N Declined	N No reply	N (%) Consent	N Participants
Children Centres	5	5	0	0	5 (100 %)	69
Police departments	12	12	4	0	8 (75 %)	66
Municipa-lities	98	96	35	20	41 (41.8 %)	625
Total	115	113	39	20	54 (47 %)	760

Note: Invalid contact-details accounted for the lack of contact to two of the municipalities.

At the initial stage of the recruitment process, the most frequently provided reasons for rejecting participation in the survey by municipalities or police districts was being too busy, undergoing structural changes or having recently completed a survey with a similar purpose. Supervisors were asked to provide information on the number of employees invited to participate in the survey to allow for the computation of response rates per department. This request was fulfilled by 32 out of 54 (71.1 %) participating departments, meaning that the overall response rate could not be computed. Where computation was possible, response-rates ranged between 20.8 % for a municipal department and 100 % for a Children Centre. The average response rate was 47.8 %, and a total of 760 respondents enrolled in the study.

3.2.4. Measures

The questionnaire was access through a weblink and consisted of a total of 130 items distributed across the measures listed in Table 5.

Table 5: Overview of the scales included in the questionnaire

Variable	Operationalisation	N items
Demographics		
Age, gender, parental status, marital status, personal trauma history, retraumatisation, personal therapy, etc.	Varying	16
Outcome-measures		
Secondary traumatisation	Professional Quality of Life (ProQoL, Stamm, 2010)	10
Burn-out	Oldenburg Burn-out Inventory (Demerouti, Mostert & Bakker, 2010)	16
Depression	Patient Health Questionnaire (PHQ-9, Kroenke, Spitzer & Williams, 2001)	9
Anxiety	Generalized Anxiety Disorder (GAD-7, Spitzer, Kroenke & Williams, 2006)	7
Work-related PTSD	International Trauma Questionnaire (ITQ, Cloitre et al., 2018)	9
Well-being	WHO-5 (Bech, 2004)	5
Functional impairment	WHO Disability Assessment Schedule (Cognitive and social subscales, Üstün, Kostanjsek, Chatterij & Rehm, 2010)	14
Predictors		
Individual factors Secondary trauma self-efficacy	Secondary Trauma self-efficacy scale (Cieslak et al., 2013)	7
Organizational factors	Copenhagen Psychosocial Questionnaire (COPSOQ II, Kristensen & Borg, 2003)	**25**
Operational factors (Exposure to trauma)	Direct/indirect, N cases with children centres, N cases with suicide/selfharm or fear thereof, CCI	**12**
Total		130

Demographic information

Demographic information about participants was recorded through questions designed for the current study. Personal characteristics included age (in years), gender (man/woman/other/prefer not to say), parental status (children/no children), marital status (married or cohabiting/not married or cohabiting). Additionally, participants were asked if they had a personal history of trauma (not otherwise specified) in childhood or adulthood (yes/no) and to what extent they would consider their personally traumatic experiences resolved (rated on a 5-point Likert-scale). Work-related characteristics included whether one is employed in a full time or part time position, whether one has worked overtime in past month (yes/no), to which professional group one belongs (Children Centre employee/municipal employee/police employee), amount of professional experience in current job (in years), amount of professional experience in total (in years), training in child protection work (yes/no), receiving case-related supervision (yes/no), receiving supervision relating to the personal impact of child-protection work (yes/no), and feelings of competence in working with child protection cases (5-point Likert scale ranging from 'Very little' to 'Very much').

Secondary traumatisation

Secondary traumatisation was operationalised using the 10-item secondary traumatisation module from the Professional Quality of Life-Scale 5 (ProQoL-5, Stamm, 2010). The Professional Quality of Life questionnaire is a three-dimensional scale operationalising compassion satisfaction, secondary traumatisation and burn-out in three 10-item subscales. Participants are instructed to rate each item on a 5-point Likert-like scale ranging from 1 ('*Never*') to 5 ('*Very often*') with reference to work-related experiences over the past 30 days. The ProQOL-5 is a screening and

research tool and is not used for diagnostic purposes (Stamm, 2010). Scores range from 10 to 50, and a provisional assessment of risk for secondary traumatisation can be achieved from two procedures: Either by summing a linear composite of items for the subscale, using cut-off scores of >22, 23-41 and 42< to determine a low, normal or high risk for STS, respectively, or by converting the scores to t-scores, using cut-off scores of 43, "around 50" and 57 to determine a low, normal or high risk for STS relative to the sample in question.

Translation procedure. The ProQoL is one of the most widely used measures of secondary traumatisation and is translated into 21 languages (March 2017). However, no Danish language version was available at the time of the current study. The measure was therefore translated into Danish in August 2017-July 2018 as detailed below using a combination of the committee-approach (stages I-III), expert review (stage IV and V) and translation-backtranslation (stage I-IV) approach:

I. The English version of the ProQoL was translated independently to Danish by two committees: A committee of researchers and a committee of clinicians.
    a. The research committee consisted of the author (MLV) and Jesper Pihl-Thingvad (JPT), a licensed psychologist in occupational medicine conducting a ph.d. in work-related trauma. Both speak Danish as a native language and are fluent in English for professional use.
    b. The clinician committee consisted of a licensed psychologist and a psychotherapist engaged with compassion fatigue as part of their

clinical practice. Both speak Danish as a native language and are fluent in English.

II. The first two drafts for a Danish version of the ProQoL were compiled, one for each of the committees.

III. The committees exchanged the Danish version of the ProQoL for review and compilation of a joint version of ProQoL in Danish. Any disagreements between the versions were discussed between the committees and resolved on case to case basis referring to theoretical foundation for the questions, psychometric difficulty of the questions, culturally sensitive formulations and clinical experience. In cases of unresolved disagreement, both items were back translated.

IV. The second version of the ProQoL in Danish was back translated to English by a fifth person fluent in Danish whose primary language is English. In cases of disagreement on the formulation of individual items in stage III, the ProQoL-group was contacted for resolution on the most appropriate formulation. Furthermore, the backtranslation was reviewed by a professor of psychology with expertise in psychometrics (MS).

V. The recommendations from the ProQoL-group and the expert in psychometrics was implemented in the third Danish version of the ProQoL that was reviewed by a Danish professor of clinical psychology with expertise in psychotraumatology for construct validity before publication.

The ProQoL has previously demonstrated good internal consistency (Stamm, 2010) that was preserved in the current study with Cronbach's $\alpha = .8$. The Danish translated version of the measure (ProQoL-5) is freely available from http://www.proqol.org/.

Burnout

Burnout was operationalised using the 16-item Oldenburg Burn-out Inventory (OLBI, Demerouti, Mostert & Bakker, 2010) for self-report of burnout symptoms. The scale consists of two dimensions measuring energy, comprised of two highly correlated dimensions: vigour and exhaustion, and (dis)engagement, comprised of distancing and dedication that form opposite ends of a latent continuum (Demerouti, Mostert & Bakker, 2010). Items are rated on a 4-point Likert-like scale ranging from 1 ('*strongly agree*') to 4 ('*strongly disagree*'). Each component is comprised of four positively and negatively phrased items corresponding to the respective dimensions that can be reverse-scored depending on one's wish to investigate work-engagement or burnout. For the current study, all positively phrased items were reverse scored to measure burnout. Subscale-scores on exhaustion and disengagement are calculated by summing associated endorsed items. An English version of the scale has previously having acceptable reliability (Cronbach's alpha > .70) and good factorial and construct validity (Halbesleben & Demerouti, 2005).

Translation procedure. The OLBI was originally formulated in German and translated into English. However, no Danish language version was available at the time of the current study. The measure was therefore translated into Danish in December 2017-January 2018 using a combination of the committee-approach (stages I-III), expert review (stage IV and V) and translation-backtranslation (stage I-IV) approach as detailed below:

I. The English version of the OLBI was translated independently to Danish by a committee of researchers in December 2017: The author (MLV) and Jesper Pihl-Thingvad (JPT), a licensed psychologist in occupational medicine doing

a ph.d. in work-related trauma. Both speak Danish as a native language and are fluent in English for professional use.

II. The German version of the OLBI was jointly translated to Danish in January 2018 by MLV (fluent in German for every-day use) in collaboration with a native German speaker living and working in Denmark with a professional proficiency in Danish.

III. The first version of the OLBI in Danish was jointly compiled from the English and German translations by MLV and JPT. Any disagreement between the versions were discussed and resolved on a case to case basis using the same criteria as employed under the ProQoL translation.

IV. The Danish version of the OLBI was back translated to German by a fifth person whose primary language is Danish and native language is German and who holds a master in German business, language and culture.

V. Any disagreement was reviewed by MLV and JPT and changes deemed necessary were implemented in the final Danish version of the OLBI that was used in the current study.

The Danish version of the measure obtained satisfactory internal stability with Cronbach's α for the full scale (.87), exhaustion (.82) and disengagement (.78).

Depression

The Patient Health Questionnaire-9 (PHQ-9, Kroenke, Spitzer & Williams, 2001) was used to assess symptoms of depression in the current study. The scale was developed as part of the PRIME-MD (Primary Care Evaluation of Mental Health Disorders) initiative to diagnose depression in primary health care settings and is a 9-item self-report instrument asking the respondent to indicate how often s/he has been bothered by the following problems in the past two weeks. Items are scored on a 4-

point Likert scale (‘Not at all’ (0) to ‘nearly every day’ (3)). Higher scores indicate higher severity with a cut-off of 10 indicating moderate levels of depressive symptomatology. The total scores range from 0 to 27. The internal reliability of the scale in prior studies is excellent (α = .89, sensitivity of 88% and a specificity of 88% for major depression, Kroenke, Spitzer & Williams, 2001) and maintained in the current study (α = .94).

Anxiety

The Generalized Anxiety Disorder-7 (GAD-7, Spitzer, Kroenke & Williams, 2006) was used to assess symptoms of generalized anxiety. The GAD-7 was developed as part of the PRIME-MD initiative to diagnose anxiety in a primary health care setting and is a 7-item self-report measure asking the respondent to indicate how often s/he has been bothered by the following problems in the past two weeks. Items are scored on a 4-point Likert scale (‘Not at all’ (0) to ‘nearly every day’ (3)). Higher total scores indicate higher severity of anxiety with a cut-off score of 10 and 15 indicating moderate and severe levels of anxiety respectively. The total scores on the GAD-7 range from 0 to 21. Internal reliability of the scale in prior studies is excellent (α =.92, Spitzer, Kroenke & Williams, 2006) and maintained in the current study (α =.95).

ICD-11 Posttraumatic Stress Disorder

Work-related posttraumatic stress disorder was operationalised using the PTSD-module from the International Trauma Questionnaire (ITQ, Cloitre et al., 2018). The ITQ PTSD-module is a 9-item self-report of PTSD developed for the ICD-11 reconceptualisation of posttraumatic stress disorder (Maercker et al., 2013). The measure consists of 6 items measuring PTSD (re-experiencing, avoidance and heightened sense of threat) and 3 items measuring functional disability associated

with the symptoms. Participants are asked to rate how much they have been bothered by their symptoms in the last month referring to the most disturbing experience they have had during their time at work, and all items are scored on a 5-point Likert scale ranging from 0 = 'Not at all' to 4 = 'Extremely'. The diagnostic criteria for PTSD requires participants to endorse one symptom in each cluster (endorsement of an item is constituted by a score of ≥2), as well as evidence of functional impairment associated with these symptoms (constituted by a score of ≥2 in the domain(s) of social life, work-life and/or other important obligations). The internal reliability of the scale has previously been found to be excellent: reexperiencing: .90, avoidance: .90, hyperarousal: .86, full PTSD-scale: .96. (Hyland et al., 2017). Cronbach's alpha in the current study was reexperiencing: .74, avoidance: .80, hyperarousal: .85, full PTSD-scale: .87.

General wellbeing

Individual general well-being was assessed using the WHO-5 wellbeing index (Bech, Olsen, Kjoller & Rasmussen, 2003). The scale was developed to allow clinicians and researchers to assess the presence of wellbeing rather than the absence of distress when evaluating mental health. It shares a 3 item overlap with the SF-36 mental health wellbeing scale but shows significantly less ceiling effect and higher sensitivity to change than the SF-36 subscale in a large sample (N = 9542) of the Danish population. The scale consists of five items asking respondents to rate what extent item content describes them over the past 14 days. Sample item: "In the past two weeks I've felt active and energised". Items are scored on a 6-point Likert scale ranging from 0 '*At no time'* to 5 '*All the time'*. For scale scoring, a linear composite is computed and multiplied by 4 to form an index ranging from 0-100. Population average is 68, and scores in the range 0-35 indicate risk of long-term stress or

depression, 35-50 indicate a potential need for further assessment, and scores of 50 or above are within the population mean and standard deviation (Bech et al., 2003; Danish National Board of Health, 2018). The scale has previously shown adequate internal consistency with Cronbach's α = .84 and maintained in the present study with α = .89.

Functional Impairment

Functional impairment was operationalised using the WHO Disability Assessment Schedule (WHODAS). The WHODAS is a 36-item self-report scale developed to evaluate functional impairment across 6 dimensions; cognition, mobility, self-care, getting along, life activities and participation (Üstün, Kostanjsek, Chatterij & Rehm, 2010). Items are rated on a 5-point Likert-like scale ranging from 0 ('*None*') to 4 ('*Extreme or cannot do*'), and participants are required to complete the scale in reference to the past 30 days. For the current study, we relied on an assessment of functional impairment in the domains of cognitive and social functioning. The WHODAS can be scored using a sum-score approach where scores under each domain are added, and possible scores range from 0 to 24 and 0 to 20 for the cognitive and social subscale, respectively, with higher scores indicating higher levels of impairment. Additionally, a dimensional score of functional impairment can be calculated using an IRT-scoring procedure available through the WHODAS-website, recommending the IRT-scores for cross-study comparison (WHO, 2019b). Construct validity for the WHODAS has been reported in multi-country studies and across clinical contexts (Üstün, Kostanjsek, Chatterij & Rehm, 2010), and the WHODAS has demonstrated satisfactory internal reliability for the cognition scale is .81 and for social interaction .79 in a sample of back-pain and depression patients.

The scale retained good internal consistency in the current sample with α = .85 for cognitive impairment and α = .83 for social impairment.

Secondary Trauma Self-Efficacy

Feelings of self-efficacy in handling experiences associated with indirect exposure to trauma were operationalised using the secondary trauma self-efficacy (STSE) scale (Cieslak et al., 2013). The STSE-scale is a 7-item one-dimensional scale developed to measure the perceived ability to cope with working with traumatized clients and with secondary traumatic stress symptoms. The scale is developed in a sample of mental health workers responding to the needs of home-coming soldiers in the US and within the social-cognitive theoretical framework (Bandura, 1997). The respondent is asked to rate each item on a 7-point Likert-like scale ranging from: 1 (very incapable), 2 (incapable), 3 (somewhat incapable), 4 (neither incapable nor capable), 5 (somewhat capable), 6 (capable), to 7 (very capable), corresponding to a total score range of 7 to 49 points, with higher scores indicating higher self-efficacy. For the purpose of the current study, the STSE was translated into Danish.

Translation procedure. The STSE was originally formulated in English. However, no Danish language version was available at the time of the current study. The measure was therefore translated into Danish in September 2017-December 2017 using a combination of the committee-approach (stages I-III) and translation-backtranslation (stage I-IV) approach as detailed below:

I. The English version of the STSE was translated independently to Danish by a committee of researchers in December September: The author (MLV) and Ida Haahr-Pedersen (IHP), a sociologist doing a ph.d. in psychotraumatology.

Both speak Danish as a native language and are fluent in English for professional use.

II. The first version of the STSE in Danish was jointly compiled from the individual translations for each of the committees. Any disagreement between the versions were discussed and resolved on a case to case basis using the same criteria as employed under the previous translations.

III. The Danish version of the STSE was back translated to English by a fifth person fluent in Danish whose primary language is English.

IV. Any disagreement between the backtranslation and the original version was reviewed by MLV and changes deemed necessary were implemented in the final Danish version of the STSE that was used in the current study.

The scale has previously demonstrated good psychometric properties with internal reliability between .88 and .89, test-retest reliability (165 days) of .65 ($p<0.001$), and previous research has supported the scale's criterion validity through negative association with secondary traumatisation, positive association with social support, and positive but small association with post-traumatic growth. The psychometric properties were somewhat lower in the current study with Cronbach's alpha = .77.

Psychosocial working conditions

Psychosocial working conditions were operationalised using scales from the Copenhagen Psychosocial Questionnaire – short form (COPSOQ, Kristensen, Hannerz, Høgh & Borg, 2005). The COPSOQ is a comprehensive self-report instrument developed for the first Danish national study of burn-out: Project on Burn-out, Motivation and work-joy (PUMA, dansk: Projekt Udbrændthed, Motivation og Arbejdsglæde). The questionnaire is available in a short (40 items), medium (87 items) and long-form (128 items) and includes items measuring factors

whose influence on occupational health is well-established such as demand, control, reward, role-clarity and -conflict, predictability, and social support. The formulation of the scale itself is not formulated is free of reference to any particular theory of occupational health but has been found to satisfactorily be able to operationalise major theories of work-related stress such as the job-strain model (demand-control, Karasek & Theorell, 1990) and the effort-reward imbalance model (Siegrist, 1996). For all items, the respondent is asked to rate agreement/endorsement on a 5-point Likert scale. As the purpose of the current study was explorative, we employed the short version of a maximum number of scales. The scales included in the current study are listed in Table 6 alongside their psychometric properties.

Table 6: COPSOQ scales used in the current study

Scale	**N=items in scale**	**Reliability estimate from long version (N items)**	**Reliability estimates, current study**
Quantitative demands	2	(4), α=.82	α=.84
Influence	2	(4), α=.73	α=.52
Meaning	2	(3), α=.74	α=.73
Role-conflict	4	(4), α= .67	α=.72
Role-clarity	3	(3), α=.78	α=.81
Possibilities for development	2	(4), α=.77	α=.43
Predictability	2	(2), α=.74	α=.69
Leadership-quality	2	(4), α=.94	α=.82
Social support, peer	2	(3), α=.70	α=.69
Social support, supervisor	2	(3), α=.79	α=.75
Social community	2	(3), α=.86	α=.81
Job-satisfaction	1	(4), α=.82	N/A
Total	**25**		

Exposure

Items measuring indirect trauma exposure was designed for the current study and included a total of 5 items. Three items assessed the exposure to cases of

physical or sexual abuse of children, cases of child protection work not involving physical or sexual abuse, and exposure to other types of potentially traumatizing experiences (such as adult survivors of sexual assault, physical assault or death) within the past month (‘Yes’=1, ’No’ = 0). Two questions were included to assess the exposure to child protection cases experienced either directly (for example through working with the child directly) or indirectly (for example through case-files, witnessing a forensic interview, seeing graphical evidence of child abuse). These items were scored on a 6-point interval scale ranging from ‘0 % of the time’ and ‘1-25 % of the time’ up to ‘100 % of the time’. Additionally, an inductive content analysis was conducted on the written statements in response to open-ended questions regarding distressing and energizing aspects of working with child protection as detailed under section 3.2.2 that were not readily subsumed under existing measures**.** This resulted in an additional 7 items referred to as the Children Centre Inventory (CCI): Two items operationalising rewards associated with child protection work (feeling like one makes a difference for a child and receiving positive feedback from a child or caregiver), two items operationalising perceptions of cross-sectoral collaboration (i.e. how well one perceives the cross-sectoral collaboration to function, and to what extent does the shared responsibility help in handling difficult cases), and 3 items operationalising other distressing experiences associated with child protection work (feelings of isolation from others, doubts about the quality of one’s work in a case and having to close a case before one is satisfied with one’s efforts). These additional items were all rated on a 5-point Likert-scale with higher scores indicating higher agreement. Finally, participants were asked to subjectively rate the extent of retraumatisation incurred by working with child protection cases (i.e. ‘Does working with child protection cases bring back

uncomfortable feelings or events from your own past?' rated on a 5-point Likert scale from 'Never' to 'Very often') and to what extent these memories are experienced as distressing (rated on a 5-point Likert-scale from 'to a very low degree' to 'to a very high degree').

3.2.5. Sample

The total sample was comprised of 760 participants out of which 670 had completed at minimum either the OLBI or the ProQoL-5 and was therefore the effective sample for the current study. The majority of the sample was comprised of municipal employees (n= 563, 81.8 %) and were female (n=594, 86.3 %) with an average age of 41.2 years (SD: 11.1, range: 23-71). Additionally, the majority of the participants were married (n=521, 77 %), had children (n = 535, 77.8 %), were employed in a full-time position of 37 hours per week (n = 577, 86.2 %) and had been employed between 1-3 years in their current job (n = 216, 32 %). A little less than half the participants (n = 330, 48.6 %) had been involved on a case of suspected physical or sexual abuse in the past month, and a total of 78.3 % (n = 531) reported having worked overtime during the past month. Table 7 displays sample demographics across different occupational groups.

Table 7: Sample descriptive statistics and differences across professional groups

	Total sample	Children Centre	Municipalities	Police
N (% of total sample)	667 (100 %)	64 (9.6%)	542 (81.3%)	61 (9.2%)
Age (years; M, SD)	41.20 (11.10)	41.62 (8.12)	40.72 (11.59)	45.10 (8.12)
Gender (N, % women)	585 (87.8 %)	59 (92.2 %)	511 (92.2 %)	24 (39.3 %)
N (%) personal trauma history	297 (47.2 %)	33 (53.2 %)	573 (53.5 %)	26 (42.6 %)
Direct exposure (mode)	1-25 % of time 361 (54.4 %)	1-25 % of time 24 (37.5 %)	1-25 % of time 308 (57 %)	1-25 % of time 29 (47.5 %)
Indirect exposure (mode)	50-75 % of time 261 (39.1%)	26-50 % of time 24 (37.5 %)	50-75 % of time 229 (42.3 %)	1-25 % of time 23 (37.7 %)
N (%) having worked with physical/sexual abuse in past month	330 (49.3 %)	64 (100 %)	211 (38.9 %)	56 (91.8 %)
N (%) having worked on cases with suicide/self-harm (mode)	'Never' 232 (34.8 %)	'Never', 39 (60.9 %)	'Rarely', 168 (31 %) / 'Sometimes', 169 (31 %)	'Never', 37 (60.7 %)

Note: The Children Centre sample was comprised of 7 administrative employees, 5 supervisors, 22 social workers and 27 psychologists. 3 participants did not provide information on role. The municipal sample was comprised of 4 administrative employees, 19 supervisors, 443 social workers, and 81 employees in a function listed as 'other', hereunder providing psychosocial services. 16 participants did not provide information on role. The majority of employees in the police-sample had multiple functions with 45 working as forensic interviewers, 4 as prosecutors, 58 working with case-management and 34 participating in case-consultations.

3.2.6. Strengths and limitations

Strengths of the current study include survey content and design founded in international research as well as national practice in child protection work, a comprehensive assessment of common mental health disorders as well as large sample of public child protection workers that altogether provides a good starting point for assessing the validity of secondary traumatisation among Danish child protection workers as well as the severity and extent of burnout and secondary

traumatisation and their individual, organisational and operational correlates among these professionals.

However, there are several limitations to the data from the current survey, many of which are associated with the lack of exhaustive sampling frame. These include the lack of opportunity to assess the representativeness of the sample in terms of age, gender and experience. Additionally, respondents sampled using the clustered approach have an unequal probability to be selected into the survey compared to the respondents sampled using the simple random approach. This hampers the current study's ability to estimate the mean levels of secondary traumatisation and burnout in the population of Danish child protection workers in general. The lack of ability to assess representativeness and the clustered sampling approach limits the generalizability of the results. More specifically, the results presented in the current study will likely underestimate the extent of stress-related disorders in the municipalities and police districts as departments opting not to participate in the survey did so for reasons that are likely associated with higher levels of stress among employees (e.g. organisational changes, high workload). Undercoverage issues such as these can be countered by assigning weights to groups of participants that are underrepresented in the sample (Groves et al., 2009), but as there is no general registry of child protection workers in Denmark to identify underrepresented elements in the sample or any other way of assessing the levels of burnout and secondary traumatisation among nonparticipating elements, the data collected was not weighted to compensate for differential selection probabilities. Overall response rates could not be computed in the current survey due to lack of information from 22 out of 54 (40.7 %) participating departments. Finally, the average response rate from departments that did provide information was 47.8 %

which is just below the criteria employed in the quality assessment of survey studies in chapter 2.

3.3. Ethical considerations and approval

Ulster University, Northern Ireland hosted the project and data-collection was conducted in Denmark. Therefore, ethical approval was sought from governing bodies in both countries.

3.3.1. Procedural considerations

All participation in the current study was voluntary. To facilitate informed consent to participation, the participants were informed of the purpose of the study in the invitation to the questionnaire. No participants were required to identify themselves directly, however, due to the nature of the population, anonymity could not be guaranteed as individual respondents might be indirectly identifiable based on demographic information (gender, age and professional group). In place of anonymity, participants were ensured confidentiality. If participants did not wish to participate under these conditions, they were free to withdraw through self-exclusion without repercussions. Confidentiality was upheld through the following measures: 1) Online survey-data was disconnected from individual e-mail addresses at point of collection. 2) A contract was formed ensuring that supervisors from the Danish Children Centers participating in the supervisory board of this study would not have access to raw data during or after the end of the project (see appendix 2). 3) Data were analysed on group-level and any results that might enable identification of individual respondents will not be disseminated.

In preparation for the data-collection, concern was raised that some respondents may find completion of trauma-related questions distressing. This was addressed during the piloting of the questionnaire on January 29th, 2018 with

employees of the Danish Children Centres. Here, it was unanimously stated that the inclusion of questions relating to personal trauma-history and recent life-stressors were desired, as this would preclude employees from being unreasonably exposed to the accusations that any negative psychological effects from working with survivors of child-abuse would be better explained by the professionals' own trauma-history. Additionally, previous research on the effect of completing a trauma history questionnaire in a sample of undergraduate students showed that the questionnaire caused minimal distress and was perceived to have greater importance and cost-benefit ratings compared to other kinds of psychological research (Cromer et al., 2006). To accommodate potential distress incurred by the completion of the online survey, contact information (telephone and e-mail) was provided for a supervisor of the project, LL, that would assist participants in clarifying where to obtain help.

3.3.2. Ethical approval in United Kingdom

Ethical approval was sought from the University of Ulster Psychology Filter Committee. On March 21st, 2018, The Filter Committee approved of the study as a category A study and allowed data-collection to proceed. Due to development in collaborative relationships, an opportunity to expand the participant-base of the current project to include a group of employees that were inaccessible at the time of the original application arose in May 2018. As the benefits of including this group of potential participants in terms of increased sophistication of analyses, increased participant-number and shortened data-collection time heavily outweighed the costs in terms of extra administrative work, an RG6 formula (Notification of a proposed substantial amendment) was filed to the Filter Committee on the 6th of June, 2018. This amendment was approved on the 12th of June 2018.

3.3.3. Ethical approval in Denmark

The Regional Scientific Ethics Committees of Denmark are charged with processing and approving ethical considerations in relation to notifiable health science projects conducted within their jurisdiction. Ethical approval was sought from the Scientific Ethics Committee of Region Southern Denmark in February 2018. On February 14th, 2018, the secretariat of the Scientific Ethics Committee concluded that the project was not required to be reported to the Committee, emphasising that studies employing a survey design fall outside the scope of the Committee's definition of a notifiable health science research project (please see appendix 3). Instead, approval was sought the Danish Data Protection Agency (DDPA) that process and approve collection of (sensitive) personal information in Denmark. On the 19th of February, the DDPA advised that data-collection commencing after the GDPR data-protection act took effect on May 25th 2018 requires no notifications made to the DDPA before the collection of data can be commenced (see appendix 4).

3.4. Data-protection

As data is collected using University of Ulster software, University of Ulster is regarded as the Data Controller. Quantitative data was collected using University of Ulster's Qualtrics license and once exported, data stored on University of Ulster's OneDrive. As an MSCA-funded project, the current study is covered by the EU open data policy, requiring data collected during the course of the project to be made publicly available. To ensure protection of participant confidentiality, a restricted open data policy was employed for the current project whereby all requests for access to data will be processed by MLV, MS, MH and representatives from the Danish Children Centres to ensure that accommodating requests for data will not

violate confidentiality (see appendix 2 for application form and data protection contract).

Chapter 4:

Burnout and secondary traumatisation among Danish child protection worker: A validation study.

Abstract

International research has suggested that child-protection workers are at elevated risk for secondary traumatisation. However, research in the area of secondary traumatisation has been hampered by the use of measures that produce scores that have unclear or inadequate psychometric properties and so far, no studies have been conducted among Danish child protection workers. The objective of the current chapter is to assess the relationship between secondary traumatisation and burnout using exploratory structural equation modelling (ESEM) and to describe the levels of secondary traumatisation and burnout among Danish child protection workers. This is done by estimating and comparing different factor models to describe the latent structure and relationship of secondary traumatisation and burnout. The best description was validated using known correlated of both outcomes through multivariate regression analysis. A three-factor ESEM model provided the best fit to the data, reflecting factors that are consistent with the structure of secondary traumatisation and burnout. The factors were differentially related to trauma-related and organizational variables in ways consistent with existing evidence. The findings supported the discriminant validity of secondary traumatisation and burnout while highlighting methodological issues around the current use of sum-score approaches to investigating secondary traumatisation.

Contents

Parts of this chapter has been accepted for publication in the European Journal of Psychotraumatology Special issue on CONTEXT under the reference:

Vang, M.L., Shevlin, M., Hansen, M., Lund, L., Askerod, D.K.K., Bramsen, R.H. & Flanagan, N. (2020). Secondary traumatisation, burnout and functional impairment: Findings from a study of Danish child protection workers. DOI: 10.1080/20008198.2020.1724416.

4.1. Introduction

Secondary traumatisation is a topical subject for both research and practice in international psychotraumatology. Bibliometrics from Web of Science (2019) suggest that the yearly number of new publications on the topic of secondary traumatisation has been steadily increasing from the middle 90's until recent years, where an average of 40 studies have been published yearly since 2016. Despite growing global interest for the topic, much of this research is still conducted in USA, corresponding to approximately 36 % of the published literature since 1995, making USA the largest single contributor to the literature (Web of Science, 2019). In practice, the increased specialization in societal responses to child abuse increases the indirect exposure to trauma and adversity experienced by providers of these services, and research suggests that this might have detrimental effects on employees' occupational well-being. Specifically, human service work involving indirect trauma exposure and high caseloads has been associated with secondary traumatisation (Figley, 1995; Hensel, et al., 2015) and burnout (Bakker, & Demerouti, 2010; Stalker et al., 2007), calling for organizations to initiate preventive efforts against the potentially corrosive effects of working with survivors of trauma.

Recently, the DSM-5 explicitly recognized indirect trauma-exposure encountered in the course of professional duties as a criterion A-event (APA, 2013), acknowledging that professionals are at-risk for developing posttraumatic stress from working with survivors of trauma, known as secondary traumatisation (Figley, 1995). While secondary traumatisation is an important topic for both research and practice in psychotraumatology, there is considerable controversy surrounding its validity, measurement and importance (Elwood et al., 2011; Molnar et al., 2017; Sprang et al., 2018). Specifically, the conceptualisation and mechanism implicated in work-related secondary traumatisation have been questioned (Elwood et al., 2011;

Hafkenscheid, 2005; Kanter, 2007; Pross & Schweitzer, 2010; Pross, 2014), inspiring researchers to rethink and reconsider the concept of secondary traumatisation. (Geoffrion, Morselli & Guay, 2016; Kadambi & Ennis, 2004). Two positions are prominent in this debate: one position argues that there is a lack of evidence supporting the existence of a unique syndrome related first and foremost to the clinical work with trauma-survivors (Elwood et al., 2011; Kadambi & Ennis, 2004; Sabin-Farrell & Turpin, 2003). In contrast, another position recognizes issues surrounding the terminology and/or operationalisations of work-related indirect traumatisation as pivotal obstacles for advancing science and practice in the field, while not calling upon these challenges to contest the reality of the syndrome itself (Horesh, 2016; Molnar et al., 2017; Sprang, Ford, Kerig & Bride, 2018; Stamm, 1997; Walsh, Mathieu & Hendricks, 2017). Indeed, despite a number of measures available to operationalise secondary traumatisation, there are two major gaps in our current understanding: evidence for the psychometric quality of the available measures is equivocal, and studies are lacking that investigate the severity of secondary traumatisation in terms of distress and functional impairment (PTSD Criterion G, APA, 2013; Elwood et al., 2011; Sprang et al., 2018).

The Professional Quality of Life Scale (ProQoL: Stamm, 2010) is one of the most widely used measures of secondary traumatisation and operationalises the construct as part of the compassion fatigue framework including burnout and compassion satisfaction (Cieslak et al., 2014; Stamm, 2010). However, research evaluating the psychometric properties of ProQol scores have produced mixed findings: some studies support the discriminant validity of secondary traumatisation and burnout while questioning the validity of single items (Galiana et al., 2017; Ghorji et al., 2018; Lago & Codo, 2013), whereas other studies fail to support the

discriminant validity entirely (Choi, 2018; Duarte, 2017; Heritage, Rees & Hegney, 2018), suggesting that selected items measuring secondary traumatisation and burnout should be merged to measure a single construct of compassion fatigue (Heritage, Rees & Hegney, 2018). Overall, issues surrounding the discriminant validity of secondary traumatisation have mostly been raised regarding its relationship to the construct of burnout.

Burnout is characterised by high levels of emotional exhaustion and negative attitudes towards one's work (disengagement, Demerouti, Mostert & Bakker, 2010) and is particularly associated with human service work. Advances in the conceptual and empirical literature on measurement of burnout has produced measures that have undergone substantial psychometric validation such as the Oldenburg Burnout Inventory (OLBI, Demerouti & Bakker, 2008; Demerouti, Mostert & Bakker, 2010; Schaufeli, Salanova, González-Romá & Bakker, 2001). However, most studies investigating the relationship between secondary traumatisation and burnout have used ProQoL, with a recent meta-analysis reporting an overall average correlation of $r = .69$ between burnout and secondary traumatisation, which increased to $r = .74$ in studies where both constructs were measured using the ProQoL (Cieslak et al., 2014). This finding might lend support to studies that have suggested that items measuring secondary traumatisation and burnout are in fact measuring one rather than two factors (Duarte, 2017; Heritage et al., 2018). Conversely, it has been suggested that the high correlation between secondary traumatisation and burnout is partially accounted for by the general distress associated with both conditions (Stamm, 2010). Indeed, recent research using bifactor modelling among child protection workers conclude that while burnout and secondary traumatisation are separate constructs, considerable variation in scale items are accounted for by a

general factor (Geoffrion et al., 2019). When interpreting the high correlation between secondary traumatisation and burnout however, some methodological considerations are warranted. The correlation coefficients in the studies included by Cieslak and colleagues (2014) were predominantly derived from analyses using summed scores uncorrected for measurement error, and therefore, the correlation might be attenuated. Conversely, since both constructs describe distressing experiences related to human service work, an alternative interpretation of the high correlation could be that some items are inadvertently measuring a degree of both constructs, thereby artificially inflating the correlation.

A common strategy for testing discriminant validity between constructs is confirmatory factor analysis (CFA) whereby a hypothesised factor structure of a measure is specified and validated by testing the correspondence between the implied covariance matrix and the actual covariance matrix obtained in an empirical study. This strategy has been used to support the construct validity of PTSD among competing models in diverse populations (Shevlin et al., 2017; Valliéres et al., 2018). Bifactor modelling is a type of CFA-analysis whereby individual items are allowed to load onto more than one prespecified factor (Holzinger & Swineford, 1937). A common application of this type of model include the partitioning of item variance into general psychopathology reflecting heightened distress that is shared among clinical constructs, usually referred to as the ‘p-factor’, from specific variance related to symptoms specific to clinical constructs (Kim & Eaton, 2015; Sharp et al., 2015), such as re-experiencing and avoidance in PTSD. Using this strategy, Geoffrion and colleagues (2019) argued that the ProQoL scale was simultaneous unidimensional and consisting of subscales consistent with burnout, secondary traumatisation and compassion satisfaction.

While CFA provides a powerful method for testing a hypothesised factor structure of a construct regardless of whether this includes one or multiple underlying factors explaining variance in the indicators, the use of CFA for bifactor modelling of secondary traumatisation and burnout requires guidance from theories on the structure of secondary traumatisation and its' relationship to burnout that are currently scarce. Studies using CFA to assess the hypothesised one-factor structure of secondary traumatisation have hitherto not allowed for examination of whether some items are concurrently measuring burnout or vice versa, although existing research converges on the observation that the ProQoL measure of secondary traumatisation displays problematic relationships to burnout and compassion satisfaction alike (Geoffrion et al., 2019; Heritage et al., 2018). However, such cross-factor loadings could be reasonably expected across constructs measuring adverse experiences specifically related to human service work, such as is specified in measures of burnout and secondary traumatisation, without compromising the integrity of the constructs themselves. Indeed, it is common for psychological measures in general to have small cross-loadings to other constructs that are reasonably explained by theory or the mere practice of formulating questionnaires (Asparouhov & Muthén, 2008). However, studies have suggested that even small cross-factor loadings (.10) might lead to biased estimates of model-fit using CFA due to the overly restrictive assumptions of this type of model where non-specified loadings are forced to be equal to 0 (Asparouhov, Muthén, & Morin, 2015; Marsh et al., 2014). Hence, if cross-factor loadings of items measuring burnout and secondary traumatisation exist, studies using CFA to model the constructs as distinct would produce a suboptimal fit to the data as previously seen in empirical research (Choi, 2018; Duarte, 2017; Geoffrion et al., 2019; Heritage et al., 2018). At worst, this

could lead to potentially erroneous or overly conservative conclusions of lack of discriminant validity due to suboptimal model fit that is explained by statistical noise such as expectable cross-factor loadings that are misinterpreted as a mismatch between cardinal theoretical points and empirical data.

Recently, methodological advances in latent variable modelling has produced a method that addresses the inability of CFA to allow for cross-factor loadings while retaining the opportunity to test and compare model fit among competing models known as Exploratory Structural Equation Modelling (ESEM, Asparouhov & Muthén, 2009). ESEM is an analytical technique that combines the strengths of exploratory (multiple factor loadings) and confirmatory (model falsification) approaches to latent variable modelling (Asparouhov & Muthén, 2009). In ESEM, indicators can load onto one or more factors that are not prespecified in nature, only in number. Importantly, ESEM is distinguishable from EFA in that predictors, or covariates, can be included in the measurement model. This means that information on important variables related to the construct of interest can be included in the modelling process and can help to inform the determination of the most appropriate organisation of factors and indicators. Consequently, this approach allows for an exploration of possible cross-factor loadings that might be useful in understanding the relationship between burnout and secondary traumatisation. Specifically, a parallel debate regarding construct validity has unfolded regarding the relationship between complex PTSD (CPTSD) and borderline personality disorder, where the former has been suggested to display too high a resemblance in symptom presentation with the latter. Hyland and colleagues (2019) recently used an ESEM approach to address this discussion, demonstrating that certain aspects of complex PTSD and borderline personality disorders are shared across the constructs while

simultaneously demonstrating the integrity of the constructs as distinct clinical phenomena (Hyland, Karatzias, Shevlin & Cloitre, 2019). Similarly, an ESEM-approach has previously been used to further explore the high correlations between depression, anxiety and burnout reported in existing literature (Bianchi & Schonfeld, 2018; Schonfeld & Bianchi, 2016). Authors reported that the emotional exhaustion dimension of burnout appear to be primarily measuring the non-specific psychological distress (the 'p-factor') also primarily tapped by measures of anxiety and depression (Schonfeld, Verkuilen & Bianchi, 2019). The current chapter will explore whether ESEM approaches offers a convincing alternative to modelling the latent structure and relationship compared to traditional CFA models.

The controversy around measurement of burnout and secondary traumatisation is pivotal to the overall aim of the current study, that is, to aid the Danish Children Centres in developing policies and procedures that might prevent the development of these conditions among their employees. An inherent prerequisite for this aim to be accomplished is a fundamental understanding of the structure and relationship of these constructs before any embedding of these constructs into organisational and operational context can be meaningfully conducted. Additionally, there has been no previous peer-reviewed studies to date that has attempted to introduce the construct of secondary traumatisation into a Danish context. Preliminary studies consisting of a survey among Danish trauma therapists suggested that 15 % might be at high risk for secondary traumatisation, and that this risk is positively related to hours of trauma-related work per week and personal history of trauma (Øyen, unpublished dissertation). However, as the survey was conducted among N=20 participants, caution should be displayed in any efforts to generalise these findings. Additionally, Schmidt (unpublished dissertation)

conducted a concept analysis followed by an interview study to examine the applicability of the concept of secondary traumatisation among three Danish elder care workers. Schmidt concludes his work by echoing the scepticism expressed in some international research that secondary traumatisation, among related terms has not been established to be sufficiently different from a generic stress-response as participants emphasise quantitative demands more so than the caring relationship they partake in when conducting their work. However, it remains unassessed whether the interviewed participants were working with elderly survivors of trauma, and therefore, caution should be displayed in discarding the applicability of secondary traumatisation in the context of human service work in Denmark on the basis of Schmidt's study.

Summarized, evidence for the applicability of secondary traumatisation in a Danish context is scarce, and more research is needed using larger, trauma-exposed samples to determine the applicability and potential extent of secondary traumatisation in a Danish context. Additionally, the relationship between secondary traumatisation and burnout is equivocal based on findings reported in international literature, and more research is needed to further elucidate the relationship between the constructs in both Danish and international research.

4.1. Aim

The current chapter has both descriptive and methodological objectives. Firstly, it aims to describe the occurrence of secondary traumatisation and burnout among Danish child protection workers. The methodological objective is to test competing models of the factor structure of secondary traumatisation and burnout using CFA and ESEM. It is expected that an ESEM model will provide the best fit to the data as it allows for the detection of cross-factor loadings between the item measuring constructs that are both related to human service work. The validity of the

best fitting model will be tested through the relationship of the factors to substantiated risk factors of secondary traumatisation (i.e. indirect exposure to trauma, personal history of trauma and social support, Hensel et al., 2015) and burnout (i.e. demand, influence and social support, O'Connor, Neff & Pitman, 2018).

4.2. Methods

4.2.1. Participants and procedure.

Data from all participants that enrolled in the online survey was used for the current analysis. Of the 761 unique participants enrolled in the study, between 670 and 667 participants provided data on secondary traumatisation and burnout, respectively, yielding an inclusion-rate of approximately 88 %. Table 8 displays sample characteristics. The majority of the participants were married (n=575, 76.6 %), had children (n = 595, 79.1 %), were employed in a full-time position of 37 hours per week (n = 641, 86 %) and had been employed between 1-3 years in their current job (n = 239, 31.9 %). A total of 78.5 % (n = 590) reported having worked overtime during the past month.

4.2.2. Measures

Background information. Participants' age measured in years, gender and profession were recorded for the current study. Participants were asked to disclose whether they had ever personally experienced any subjectively rated traumatic event (0=no/1=yes).

4.2.2.1. Exposure-characteristics:

Participants were asked about (1) the ratio of time spent working face to face with children ('direct') and reading, viewing or discussing case-materials ('indirect') on a 5- point scale ('0% of the time' to '76% - 100% of the time'), (2) the severity of their cases with one item assessing whether employees had had cases with survivors of

physical or sexual child-abuse in the past month (‘abuse case’, 0=no/1=yes), and one item assessing how often they had had cases in which someone had committed suicide or harmed themselves in the past year (‘suicide/self-harm’, 5-point Likert-like scale from ‘never’ to ‘very often’).

4.2.2.2. Work-characteristics

Scales from The Copenhagen Psychosocial Questionnaire (COPSOQ, Pejtersen, Kristensen, Borg & Bjoerner, 2010) short version were used to assess quantitative demands (2 items), influence (2 items), and social support from supervisor and colleagues (2 items each). Items are rated on a 5-point Likert-like scale ranging from 0 (‘*Always*’/’*To a very large extent*’) to 4 (‘*Never*’/’*To a very small extent*’). Scores ranged from 0-8 points for each subscale.

4.2.2.3. Clinical outcomes

Secondary traumatisation was operationalised using the 10-item secondary traumatisation module from The ProQoL-5 (Stamm, 2010). Burnout was operationalised as a two-dimensional construct consisting of emotional exhaustion and depersonalisation using the OLBI. Depression and anxiety were operationalised using the PRIME-MD measures of PHQ-9 and GAD-7, and well-being and functional impairment was operationalised using the WHO-5 and WHODAS, respectively. Full details of the clinical measures can be obtained in chapter 3, section 3.2.4. To facilitate interpretation of the occurrence of secondary traumatisation and burnout, mean scores and standard deviations in international studies using the ProQoL-5 and OLBI is reported for comparison.

Table 8: Sample descriptive statistics across professional groups

	Children Centre	Municipalities	Police	Total sample
N (% of total sample)	64 (9.6%)	542 (81.3%)	61 (9.2%)	667 (100 %)
Age (years; M, SD)	41.62 (8.12)	40.72 (11.59)	45.10 (8.12)	41.20 (11.10)
Gender (N, % women)	60 (93.8 %)	501 (92.6 %)	24 (39.3 %)	585 (87.8 %)
N (%) personal trauma history	33 (53.2 %)	573 (53.5 %)	26 (42.6 %)	297 (47.2 %)
Direct exposure (mode)	1-25 % of time 24 (37.5 %)	1-25 % of time 308 (57 %)	1-25 % of time 29 (47.5 %)	1-25 % of time 361 (54.4 %)
Indirect exposure (mode)	26-50 % of time 24 (37.5 %)	50-75 % of time 229 (42.3 %)	1-25 % of time 23 (37.7 %)	50-75 % of time 261 (39.1%)
N (%) having worked with physical/sexual abuse in past month	64 (100 %)	211 (38.9 %)	56 (91.8 %)	331 (49.6 %)
N (%) having worked on cases with suicide/self-harm (mode)	'Never', 39 (60.9 %)	'Rarely', 168 (31 %) / 'Sometimes', 169 (31 %)	'Never', 37 (60.7 %)	'Never' 232 (34.8 %)
Demand	3.67 (.73)	4.17 (1.13)	3.93 (1.15)	4.11 (1.11)
Control	7.45 (.69)	4.51 (1.8)	5.93 (1.8)	4.93 (2)
Social support, supervisor	7.77 (.56)	6.76 (1.37)	6.81 (1.29)	6.87 (1.34)
Social support, colleagues	7.89 (.48)	7.54 (.8)	7.46 (.76)	7.57 (.77)
Secondary traumatisation (Mean sum, SD)	16.88 (5.61)	17.15 (5.2)	14.03 (4.58)	16.84 (5.26)
Disengagement (Mean sum, SD)	16.63 (3.07)	17.70 (3.87)	18.08 (3.54)	17.63 (3.78)
Exhaustion (Mean sum, SD)	18.70 (4.09)	19.74 (3.9)	18.10 (3.6)	19.50 (3.92)

Note: The Children Centre sample was comprised of 7 administrative employees, 5 supervisors, 22 social workers and 27 psychologists. 3 participants did not provide information on role. The municipal sample was comprised of 4 administrative employees, 19 supervisors, 443 social workers, and 81 employees in a function listed as ‘other’, hereunder providing psychosocial services. 16 participants did not provide information on role. The majority of employees in the police-sample had multiple functions with 45 working as forensic interviewers, 4 as prosecutors, 58 working with case-management and 34 participating in case-consultations.

Specifically, mean scores and standard deviations from a study of Norwegian child protection workers (M = 21.1, SD = 4.6, Baugerud, Vangsbæk & Melinder, 2018) reviewed in chapter 2 was chosen as comparison group for secondary traumatisation as conditions of Norwegian child protection workers is expected to be most closely resembling Danish conditions among the available evidence. On a similar rationale, means and standard deviations on the OLBI in a study of Dutch medical doctors (Demerouti & Bakker, 2008) of 2.53 and 2.38 for emotional exhaustion and disengagement, respectively (Demerouti & Bakker, 2008) were the best available comparison group for burnout scores.

4.2.3. Data-analysis.

Data-analysis proceeded in three linked stages. To address the first objective, sum scores and standard deviations for burnout dimensions and secondary traumatisation was computed for all participants. Additionally, differences between Children Centre employees, municipal employees and police employees were tested using ANOVA. To address the second objective, five measurement-models of burnout and secondary traumatisation were specified and tested for model fit. Model 2 and 3 was specified using CFA. Model 2 assumed two factors consistent with secondary traumatisation, measured by the ProQoL, and burnout, measured by OLBI-items, respectively. Model 3 assumed three factors, one of secondary traumatisation measured by the ProQoL-items, one of exhaustion and one of disengagement, measured by the OLBI. Model 1, 4 and 5 were specified using EFA: Model 1 assumed a one-factor structure indicated by items from ProQoL and OLBI. Model 4 assumed a 2-factor structure of the data, whereas model 5 assumed a 3-factor structure of the data. Model 4 and 5 were hypothesised to be structurally identical to model 2 and 3 but specified using EFA where item factor-loadings were

free to vary and to load on multiple factors (cross-loadings). Figure 8 displays the models tested.

Thirdly, A structural model testing the relationship between the factors of the best-fitting model and correlates of burnout and secondary traumatisation was conducted to test the validity of the model. This model included age, sex, personal trauma history, profession (municipal employee, police employee or children centre employee), severity of exposure, demand, control and social support from supervisor and colleagues as predictors of the factors. Missing data on one or more of the predictor-variables was reported by approximately 15 % of the participants and was handled using list-wise deletion, resulting in a total sample of n=568 participants for the structural model.

The fit of each model was assessed using a range of goodness-of-fit statistics. A non-significant chi-square-test (χ^2) is indicative of acceptable model fit, however, as this test statistic is positively related to sample size, models should not solely be rejected based on a significant chi-square test in large sample-sizes (Tanaka, 1987). Therefore, the evaluation of model fit was supplemented by incremental, absolute and parsimonious fit indices. Incremental fit indices compare the hypothesised model to an independence model (i.e. where there is no relationship between variables in the model) and evaluate the extent to which the proposed model represents an improvement in describing the data structure over the independence, or null, model where the variables are specified to be uncorrelated. The Comparative Fit Index (CFI, Bentler, 1990) and Tucker-Lewis Index (TLI, Tucker & Lewis, 1973) were used for the current analysis, both for which values > .90 and > .95 indicate adequate and excellent fit, respectively (Hu & Bentler, 1995; Kline, 2005). In addition to incremental fit indices, absolute fit indices were used to assess the degree

of error in the hypothesised model, that is, model misfit. The Root Mean Square Error of Approximation (RMSEA) values and Standardized Root Mean Square Residual (SRMR) were used for the current analysis with values < .08 and < .05 indicating adequate and excellent model fit, respectively (Jöreskog & Sörbom, 1981; 1993). Finally, these indices were supplemented by three parsimony-corrected fit-indices: The Akaike Information Criterion (AIC, Akaike, 1987), the Bayesian Information Criterion (BIC, Schwarz, 1978) and the sample-size adjusted BIC (ssaBIC, Sclove, 1987). Parsimony adjusted fit indices can be used to compare model fit between nested models. Nested models are statistical models of the same sample distribution in which all parameters in one model are part of parameters in another model (Bentler & Satorra, 2010). Parsimony adjusted fit indices penalise model complexity, and the model displaying the lowest values should be preferred as this indicates better fit of the statistical model to the observed data. All analyses were performed in Mplus 8.11 using robust maximum likelihood (MLR) estimation (Yuan & Bentler, 1998).

4.3. Results

Table 9 displays the mean score and standard deviations on secondary traumatisation and burnout across the full sample and occupational groups.

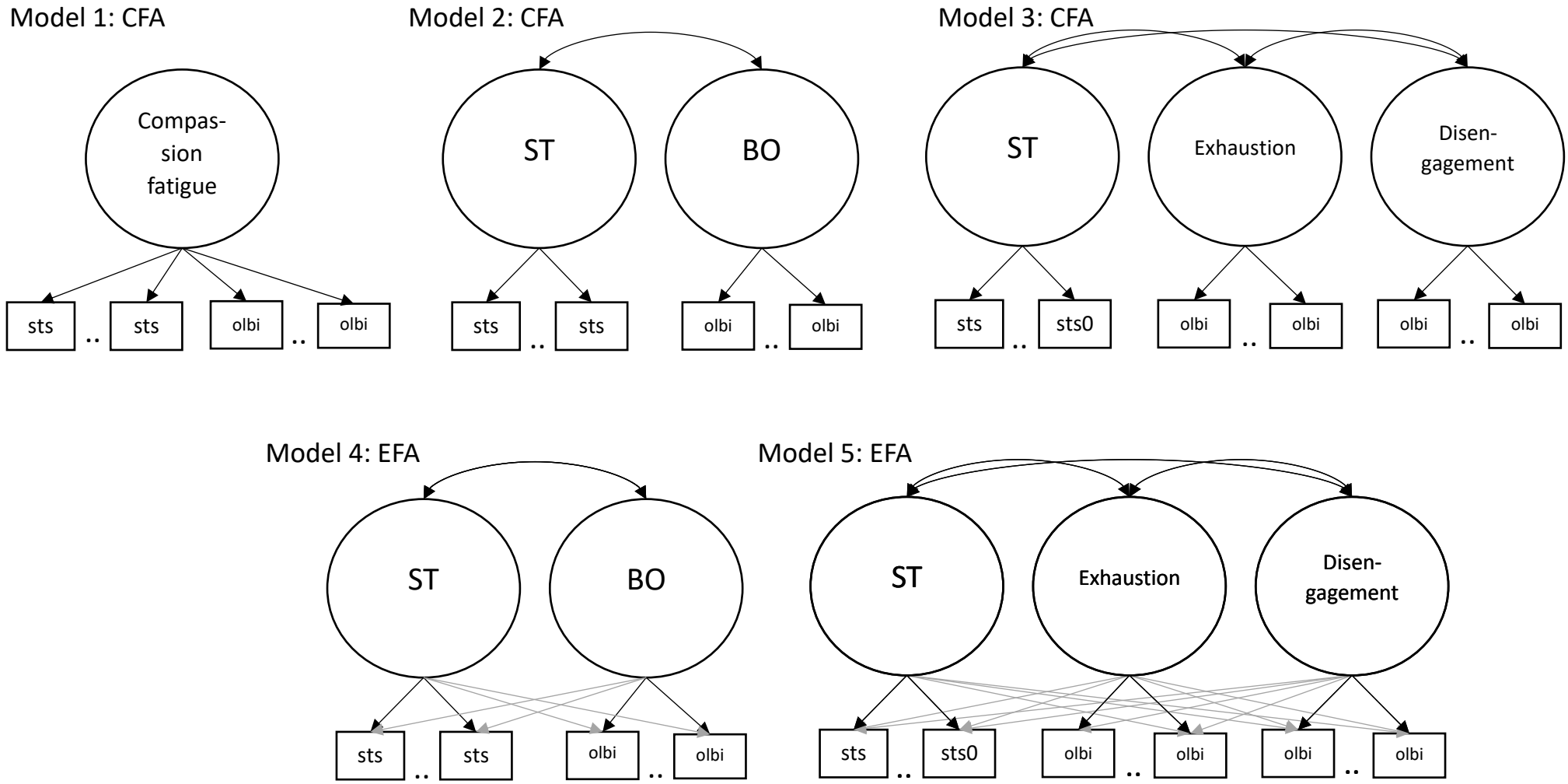
Table 9: Mean scores and standard deviations on main outcomes

	ST	BO	EE	Diseng.
Comparison	21.1 (4.6)[1]	N/A[2]	2.53 (N/A)[2]	2.38 (N/A)[2]
Total	16.81 (5.26)	2.32 (.48)	2.43 (.49)	2.20 (.47)
Children Centres[C]	16.90 (5.65)[P]	2.16 (.48)	2.34 (.51)	2.08 (.38)
Municipalities[M]	17.12 (5.19)[P]	2.34 (.49)	2.47 (.49)[P]	2.21 (.48)
Police[P]	14.03 (4.58)[M,C]	2.26 (.45)	2.26 (.45)[M]	2.26 (.44)

Note: Superscript letters denotes statistically significant differences between subgroups at $p \leq 0.05$. Superscript numbers denote source of comparison. [1]Baugerud et al. (2018), [2]Demerouti & Baker (2008). All scores are linear composite scores, apart from burnout where scores are mean item scores. Range: 1-4, 4 = highest score on burnout. N/A: Not reported. N varied between 613 and 670 for the outcomes.

Overall, levels of secondary traumatisation among Danish child protection workers were lower than reported among Norwegian child protection workers ($t(1174)=14.606$, $p < .001$) as well as lower than the cut-off of 22 indicating average risk of secondary traumatisation on the ProQoL (Baugerud et al., 2018; Stamm, 2010).

Figure 8: Proposed measurement models of secondary traumatisation and burnout



Levels of burnout were comparable on total scale level as well as individual dimensions among Danish child protection workers and Dutch medical doctors although significance tests could not be conducted due to unreported standard deviations (Demerouti & Bakker, 2008). Among professional groups, police-employees scored statistically significantly lower than municipal and Children Centre employees on secondary traumatisation, whereas the latter two did not differ statistically significantly from each other on secondary traumatisation ($F(2, 666) = 9.6$, $p < .001$). Police employees scored statistically significantly lower than municipal employees on exhaustion ($F(2,664) = 6.160$, $p = .002$). There were no statistically significant differences between groups on scores of disengagement ($F(2,664) = 2.791$, $p = .062$) and although the overall F-test was significant for total score on the burnout scale ($F(2,664) = 3.131$, $p = .044$), p-values for Bonferonni post hoc test ranged from .07 to 1 for group differences.

Table 10 shows the fit statistics for models 1-5. Model 1 provided a poor fit to the data, whereas fit indices improved up until the AIC, BIC and ssaBIC indicated that model 5 provided the best fit to the data across all models tested. This was corroborated by the CFI indicating model 5 as the only model providing an adequate fit, the TLI approximating an adequate fit and the SRMR and RMSEA indicated that model 5 represents an excellent approximation to the data-structure. Model 5 was therefore selected as the best-fitting model.

Table 10: Fit statistics for measurement models of burnout and secondary traumatisation

Model	Chi^2 (df)	AIC	BIC	ssaBIC	RMSEA (95 % CI)	CFI	TLI	SRMR
Model 1	1710.746* (299)	36088.974	36441.583	36193.924	.083 (.080- .087)	0.699	0.673	0.083
Model 2	1152.042* (298)	35422.515	35779.644	35528.810	.065 (.061- .069)	0.818	0.801	0.066
Model 3	1003.148* (296)	35247.823	35613.993	35356.809	.059 (.055- .063)	0.849	0.834	0.063
Model 4	932.478 * (294)	35190.174	35655.798	35328.761	.059 (.055- .064)	0.860	0.833	0.048
Model 5	**615.349 * (250)**	**34856.055**	**35430.174**	**35026.934**	**.046 (.042- .051)**	**0.922**	**0.899**	**0.036**

Note: Model 1: one-factor EFA (occupational stress). Model 2: Two-factor CFA (BO and STS, no cross-loadings). Model 3: Three factor CFA (disengagement, exhaustion and STS, no crossloadings). Model 4: Two factor EFA (BO and ST including cross-loadings), Model 5: Three factor EFA (disengagement, exhaustion, STS, including cross-loadings). *p < .01.

This model was carried over to an ESEM model whereby relationship between factors and predictors were tested by means of multivariate ANOVA. Table 11 displays the factor-loadings and cross-loadings of the items onto the factors in the ESEM analysis. Three factors emerged that displayed factor loadings consistent with theoretical accounts and previous research on the structure of STS, and disengagement and exhaustion as constituents of BO. Results also suggested the existence of cross-factor loadings of statistical significance and relevant magnitude across some indicators of all factors. The construct of secondary traumatisation was supported with only one hypothesised item not loading statistically significantly onto the factor (STS-2), and with some items displaying cross-loadings onto the disengagement (STS-2, 13, 28) and exhaustion factor (STS-2, 5, 7, 9, 11, 28). Similarly, all hypothesised indicators of disengagement loaded statistically significantly onto the same factor, and four items displayed cross-loadings onto STS (OLBI item 11) or exhaustion (OLBI items 1, 11, 15). Finally, all but two

hypothesised indicators of exhaustion (OLBI-5, 16) loaded statistically significantly onto the same factor with a total of six items displaying cross-factor loadings onto STS (OLBI-8, 16) or disengagement (OLBI-2, 5, 8, 10, 14, 16).

Table 11: Hypothesised and actual pattern of factor loadings and cross-loadings of model 5

	F1 – Secondary traumatisation		F2 - Disengagement		F3 – Exhaustion	
	λ	p	λ	p	λ	p
Sts2	0.063	0.470	**-0.232**	0.002	**0.461**	0.000
Sts5	**0.299**	0.001	-0.007	0.882	**0.253**	0.004
Sts7	**0.263**	0.007	0.021	0.617	**0.400**	0.000
Sts9	**0.580**	0.000	0.015	0.686	**0.178**	0.050
Sts11	**0.435**	0.000	-0.036	0.380	**0.369**	0.000
Sts13	**0.607**	0.000	**0.137**	0.012	0.000	0.997
Sts14	**0.736**	0.000	0.005	0.815	-0.164	-0.164
Sts23	**0.714**	0.000	-0.028	0.524	-0.147	0.198
Sts25	**0.693**	0.000	0.072	0.176	0.030	0.690
Sts28	**0.344**	0.001	**0.119**	0.048	0.106	0.271
OLBI1	-0.017	0.497	**0.823**	0.000	**-0.392**	0.000
OLBI2	-0.049	0.322	**0.341**	0.001	**0.491**	0.000
OLBI3	0.121	0.025	**0.617**	0.000	0.088	0.332
OLBI4	0.054	0.269	0.149	0.153	**0.561**	0.000
OLBI5	0.107	0.141	**0.318**	0.000	0.159	0.114
OLBI6	0.106	0.125	**0.493**	0.000	-0.003	0.962
OLBI7	0.028	0.575	**0.786**	0.000	-0.130	0.221
OLBI8	**0.145**	0.002	**0.313**	0.001	**0.415**	0.000
OLBI9	-0.001	0.984	**0.339**	0.000	0.113	0.238
OLBI10	-0.002	0.978	**0.185**	0.017	**0.352**	0.000
OLBI11	**0.190**	0.007	**0.257**	0.001	**0.219**	0.010

OLBI12	-0.008	0.716	0.185	0.104	**0.613**	0.000
OLBI13	-0.054	0.373	**0.559**	0.000	-0.112	0.155
OLBI14	-0.056	0.473	**0.319**	0.000	**0.184**	0.040
OLBI15	0.026	0.625	**0.857**	0.000	**-0.216**	0.008
OLBI16	**-0.160**	0.004	**0.718**	0.000	0.030	0.615

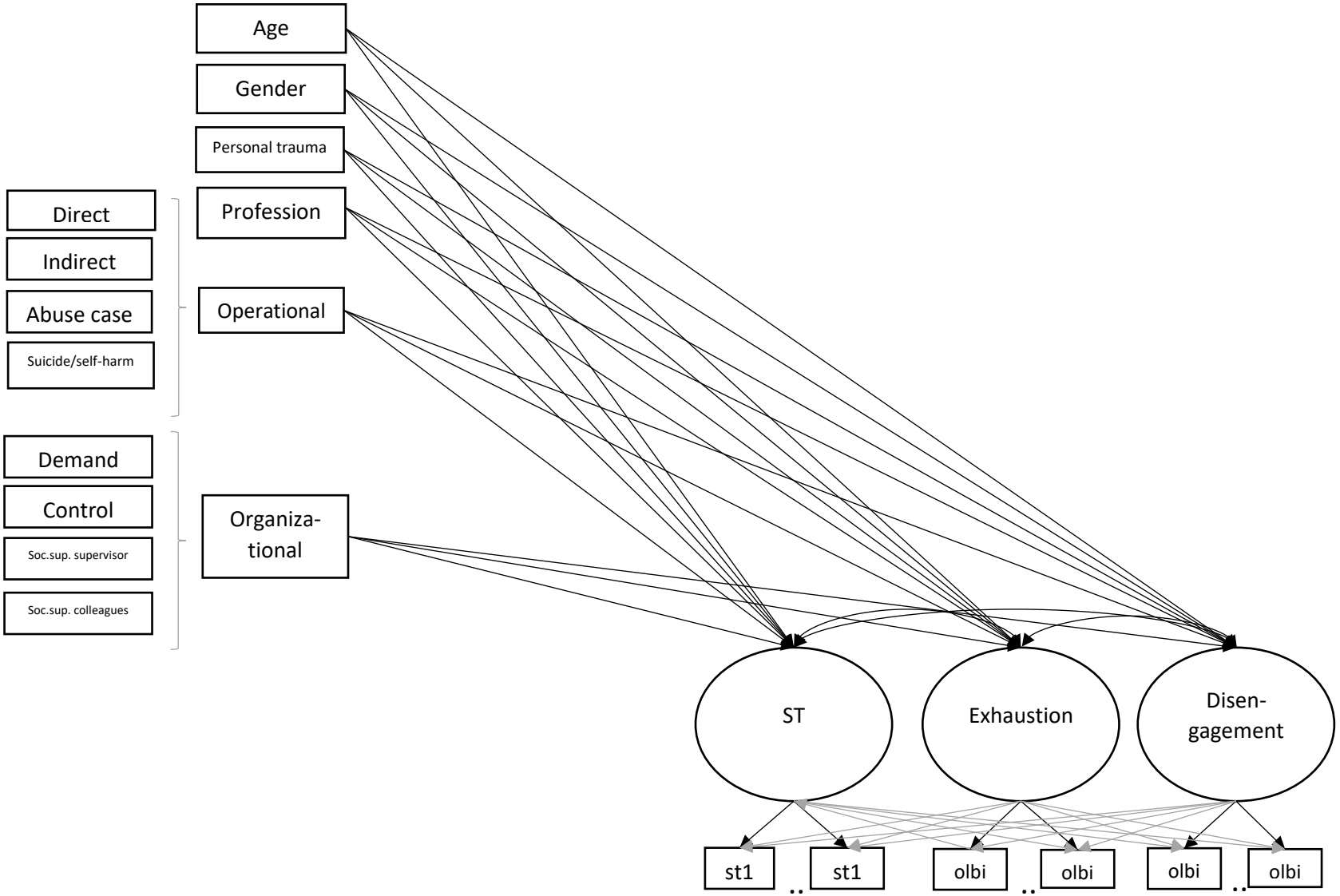
Note: Grey slots in the table indicate the hypothesised factor loadings (λ) and bold writing indicate statistically significant factor loadings ($p \geq .05$).

Table 12 displays the regression coefficients for the structural model of correlates and factors from the ESEM analysis. The model provided an adequate description of the data (χ^2 (549) = 1077.427, $p > .01$, RMSEA (90 % CI) = .041 (.038 - .045), CFI = .895, TLI = .873, SRMR = .037), and a statistically significant amount of variance in each factor was explained by the correlates. Figure 9 displays the final structural model.

Table 11: Standardized regression coefficients (β) for the structural model

	F1 – Secondary traumatisation		F2 – Disengagement		F3 – Exhaustion	
	β	*p*	β	*p*	β	*p*
Age	-.009	.849	**-.147**	**.000**	**.134**	**.004**
Gender	-.056	.165	.034	.430	.029	.578
Personal trauma history (1=no, 2=yes)	**.118**	**.002**	.017	.633	**.097**	**.020**
Municipal employee	**-.445**	.032	.058	.604	.132	.277
Police employee	-.413	.058	.160	.179	-.068	.594
Direct exposure	**.106**	**.038**	-.029	.460	.083	.059
Indirect exposure	.041	.458	.022	.568	.080	.055
Abuse case	.023	.647	.05	.172	-.010	.824
Suicide/self-harm	.083	.122	-.036	.347	.026	.531
Demand	-.087	.171	**.195**	**.000**	**.422**	**.000**
Control	-.044	.378	**-.293**	**.000**	-.035	.564
Social support, supervisor	**-.253**	**.000**	**-.310**	**.000**	**-.180**	**.003**
Social support, colleagues	.070	.103	-.035	.416	**.122**	**.009**
R^2	.179		.428		.488	

Figure 9: Structural model of the relationship between correlates of secondary traumatisation and burnout



Personal trauma history and social support from supervisor were statistically significantly related to secondary traumatisation that was lower amongst municipal employees compared to children centre employees. Age, demand, control, and social support from supervisor was related to disengagement. Finally, age, personal trauma history, control and support from colleagues and supervisor were related to exhaustion. Secondary traumatisation correlated at $r = .29$, $p < .001$ and $r = .45$, $p < .001$ with disengagement and exhaustion respectively, and disengagement and exhaustion were correlated at $r = .50$, $p < .01$.

4.5. Discussion

The purpose of the current chapter was twofold: To assess the occurrence of secondary traumatisation and burnout in a Danish population of child protection workers and to test the latent structure and relationship between secondary traumatisation and burnout.

Results indicated that the risk of secondary traumatisation among Danish child protection workers in general was low according to recommended cut-off scores on the ProQoL (Stamm, 2010) as well as in comparison with Norwegian child protection workers. The level of burnout was average compared to the scale-range, where 2 equals ‘disagree’ and 3 equals ‘agree’ to item content, and similar to the reported levels among Dutch medical doctors. These findings indicate that secondary traumatisation and burnout appear to be a limited concern among Danish child protection workers as per the linear composite scores.

Despite the limited average severity of secondary traumatisation and burnout among Danish child protection workers, item factor loadings as well as the latent relationship between the constructs suggested that secondary traumatisation and burnout are coherent construct when operationalised using the ProQoL-5 and OLBI.

Furthermore, secondary traumatisation is distinguishable from burnout in terms of its factor structure and relationship to substantiated predictors. Factor correlations between secondary traumatisation and burnout dimensions were smaller than the average correlations reported by Cieslak and colleagues (2014), suggesting that magnitudes of the relationship reported in existing research might be inflated due to some individual indicators of burnout and secondary traumatisation measuring work-related experiences that are shared between the constructs. However, correlations between the latent factors suggested that emotional exhaustion correlated comparably high with secondary traumatisation (r = .45) and disengagement (r = .50). This current study alone is unable to determine whether this finding supports Schonfeld and colleagues' (2019) argument that emotional exhaustion represents non-specific psychological distress that in case would be associated both with disengagement and symptoms of secondary traumatisation.

While factor loadings suggested that secondary traumatisation was coherent construct when operationalised using the ProQoL-5, the current study also documented the existence of cross-loadings of a relevant magnitude for several items systematically loading onto particularly the emotional exhaustion factor. In contrast, there were no systematic pattern of cross-loadings from the burnout dimensions on the secondary traumatisation factor: Only one item from the disengagement dimension displayed cross loadings on the STS scale, and two items from the exhaustion dimension displayed reversed cross-loadings, one was negative and one was positive. Hence, operationalising secondary traumatisation using the ProQoL-5 inadvertently captures emotional exhaustion in addition to symptoms of secondary traumatisation. The strongest cross-factor loadings were seen for STS7 and STS11 (>.30). STS11 (feeling 'on edge' about various things) has previously been

suggested to measure ‘wear and tear’ associated with burnout over secondary traumatisation (Duarte, 2017), and the content of STS7 (difficulties separating personal life from life as a helper) resembles work-family conflict that has previously been associated with both burnout and secondary traumatisation in child protection workers (Baugerud et al., 2018). Hence, these items appear to be measuring experiences that are associated with both burnout and secondary traumatisation or more generic stress responses. As several items from the ProQoL-5 load onto both the secondary traumatisation and emotional exhaustion latent factors with non-trivial size loadings, it is debatable whether these experiences (2: being highly preoccupied with more than one client, 5: exaggerated startle response, 7: difficulty separating personal life from life as a helper, 9: affected by others’ traumatic stress, 11: feeling tense/uneasy due to helping others) are specific to either construct or might be indicative of general psychological distress. Similarly, OLBI-8 and OLBI-11 loaded onto all factors albeit with weaker loadings (between .14 and .4), suggesting that feelings of emotional drain and feeling sickened by work- either also represents work-related experiences associated with both burnout and secondary traumatisation, or might represent more generic stress-responses based on the low loadings on all factors.

The finding of cross-factor loadings as well as factor loadings of varying strength carries important implications for the predominant use of the sum-score or linear composite approach in existing literature investigating the relationship between secondary traumatisation and burnout. The linear composite approach assumes that all indicators measure the factor perfectly (e.g. are error-free) and equally well. While it is uncontroversial that this assumption is not met in psychological research, common use assumes that any violations of this assumption

are not fatal to the overall opportunity to interpret the sum-scores as reflecting varying levels on the latent construct. However, results from the current study suggest that this assumption is violated to an extent that is likely to lead to misspecification of relationships between burnout, secondary traumatisation and risk and protective factors when relying on linear composites of the ProQoL-5. A most notable example is found in a comparison of the linear composite approach and factor approach to assessing risk of secondary traumatisation across different occupational groups in the current study. Using the linear composite approach, there were no statistically significant differences between municipal employees and Children Centre employees on secondary traumatisation. However, using the latent variable approach, municipal employees were at statistically significantly lower risk for secondary traumatisation ($\beta = -.45$, $p = .032$) than Children Centre employees, a finding that was obscured using the recommended linear composite approach.

4.6. Conclusion

Findings from the study supports the conceptual integrity of secondary traumatisation vis á vis burnout. However, operationalisations of secondary traumatisation using the ProQoL-5 inadvertently measures emotional exhaustion and to a lesser extent disengagement in addition to symptoms of secondary traumatisation. As several items from the ProQoL load onto two latent factors with non-trivial sized loadings, it is debatable whether these items are specific to either construct or might be indicative of general psychological distress. Further research is required to examine whether these items are of central importance to syndrome presentation as well as their stability over time compared to the core symptoms. This would allow a further evaluation of whether they are best conceived of as a decentral but important part of the syndrome(s), or whether they represent transient distress or

a more generic psychosomatic response to strain akin to the general adaptation response (Selye, 1956) or the general psychopathology factor (Kotov, Krueger & Watson, 2018; Kotov et al., 2017) that is not necessarily related to human service work. The continuous report of more of these experiences might be indicative of the need for further screening for burnout and secondary traumatisation alike. Results from the current study also indicated that a recalibration of scoring procedures for ProQoL-5 secondary traumatisation is needed that balances clinical utility with psychometric properties. However, future research is needed to explore whether findings from the current study will replicate in other professional samples and using other measures of the outcomes.

Limitations of the current study include a cross-sectional design that precludes any causal inferences about the relationship between correlates and outcomes. The structural results cannot be generalized to the relationship between secondary traumatisation and burnout when both constructs are studied using other measures, and more studies are needed to explore whether specific cross-factor loadings can be generalized or differ across measures or professional groups. Future research is warranted with the aim of validating a cut-off for measures of secondary traumatisation that is consistent with clinically relevant levels of functional impairment and distress to support epidemiological studies of secondary traumatisation. This will in turn support further exploration of the risk of protective factors of the syndrome before studies evaluating the effectiveness of intervention and preventive initiatives are warranted.

Chapter 5:

Identifying employees at risk for burnout and secondary traumatisation: A latent class approach

Abstract

Child protection workers are at risk for both burnout and secondary traumatisation due to their occupational duties and conditions. However, issues regarding the accurate and sufficient operationalisation of these constructs persist, and particularly, a valid method is lacking for identifying employees that might be in need of clinical intervention. The purpose of the present study is to test the applicability of latent class analysis to identify child protection workers at risk for secondary traumatisation and burnout in a national sample of 670 Danish professionals. The ProQoL-5 was used to operationalise secondary traumatisation and OLBI was used to operationalise burnout. Clinical significance of the symptom presentation was tested using regression analysis to assess levels of distress and functional impairment associated with the syndromes. Specifically, the clinical significance of different symptom profiles was tested using levels depression, anxiety, general wellbeing, functional impairment and sum-scores on burnout and secondary traumatisation. The current study found that 4 % and 18.3 % of Danish child protection workers were at risk for secondary traumatisation and burnout, respectively, that might warrant a clinical intervention. Out of these, 2 % were at risk for both syndromes at levels that might warrant a clinical intervention. The high-risk group of burnout were significantly more distressed and impaired than all other classes on the measure of burnout, and the high risk class of secondary traumatisation had a significantly higher risk of anxiety, burnout, lower well-being and social functional impairment compared to all other classes on the measure of secondary traumatisation. Danish child protection workers are primarily at risk for burnout, but clinically significant cases of both burnout and secondary traumatisation was identified. The recommended cut-off score for ProQoL-5 was unable to differentiate between employees experiencing secondary traumatisation and more generic symptoms of stress. A revised scoring procedure on the ProQoL-5 might be useful for screening employees at risk for secondary traumatisation.

Contents

5.1. Introduction

In the previous chapter, factor analytic approaches were used to demonstrate that secondary traumatisation and burnout were sufficiently distinct statistical constructs to warrant their conceptual separation when measured using the ProQoL and the OLBI. The results predominantly lent support to the body of research arguing secondary traumatisation as a stand-alone construct reflecting experiences particularly related to working with survivors of trauma. On the other hand, the emergence of non-negligible cross-loadings between selected items measuring secondary traumatisation and burnout also suggested that there is a degree of overlap between the constructs when operationalised using the available measures.

Research on psychological distress in general and occupational well-being in particular is increasingly being conducted using a dimensional approach to modelling outcomes of interest, such as employed in chapter 4. Dimensional models of psychopathology allow for estimation of symptom severity across a continuum that more readily resembles the phenomenological manifestation of psychological distress compared to binary categorical approaches as is implied in clinical diagnosis (see Tay, Rees, Chen, Kareth, & Silove, 2015, for an example). Factor analytic models also have statistical advantages such as controlling for measurement error in the analysis, which allows for precise estimation of relationships between constructs of interest as well as the opportunity to test the overall fit of the theoretical model to the data, thereby more precisely assessing the quality of the theory in explaining the phenomenon of interest (Bollen, 1989). In the case of the current study, it qualified the assessment of whether the constructs of secondary traumatisation and burnout are describing sufficiently different symptom profiles to be regarded as different syndromes in practice. The results of this type of analysis are informative regarding whether these syndromes might warrant differentiated preventive efforts. However,

despite the advantages of latent variable modelling, an inherent limitation to factor models in general are their lack of ready transferability to guide clinical interventions, for example through a cut-off score that is quick and helpful in identifying potentially problematic levels of secondary traumatisation and burnout. Such comparably coarse approaches are key for estimating the prevalence of syndromes in a population as well as when individuals and organisations wish to map and prevent the occurrence of secondary traumatisation and burnout on an organisational level. In practice, clinicians rely heavily on a categorical approach to distress when determining the presence or absence of a disorder. Hence, while the results from chapter 4 are of great value in determining the value of the employed definitions of work-related distress, a translation of this definition into a more clinically applicable format is needed to facilitate the extent of their occurrence in Danish child protection workers as well as for the development of a psychological model describing key factors in their development. However, due to the non-negligible overlap between the syndromes, accurate delineation of the presence/absence of either syndrome is a central challenge to be overcome. Recently, latent class models are increasingly being used for diagnostic purposes in cases where there is no golden standard (van Smeeden, Naaktgeboren, Reitsme, Moons & de Groot, 2013). Advantages of this approach include its' ability to produce valid estimates of diagnostic accuracy of a test even in absence of an accurate disorder status classification as is the case in the current study. Consequently, the approximation of a categorical classification of individuals at risk for secondary traumatisation and/or burnout is the purpose of the current chapter as well as central to the research agenda to advance knowledge on secondary traumatisation in general (Molnar et al., 2017; Sprang et al., 2018).

5.1.1. Prevalence of secondary traumatisation and burnout

Although research in trauma-related symptomatology has been undertaken in a Danish context since 1980ies (Elklit, 1988), a study on the prevalence of PTSD in the general Danish population has yet to be conducted. Similarly, no studies using larger samples of employees working with trauma survivors have been conducted for estimating the prevalence of secondary traumatisation. Therefore, it is necessary to rely on international estimates of prevalence rates for both disorders. PTSD prevalence worldwide has been estimated in the World Mental Health surveys, suggesting that the life-time prevalence of PTSD ranges between 6.8% and 7.8% (Kessler et al., 1995, Kessler et al., 2005) although the traumatic potential of experiences differ with sexual trauma having the highest risk of eliciting PTSD (Kessler et al., 2017). In contrast, efforts to determine the prevalence of secondary traumatisation among are still in their infancy. Table 12 displays an overview of international surveys conducted among child protection workers that include an estimate of the occurrence rate of secondary traumatisation in their sample as per available cut-offs.

As evident from the table, occurrence rates vary considerably and range between 0 % (Baugerud et al., 2018) and up to 34.2 % (Conrad & Kellar-Guenther, 2006) of the sample. Much of this variation is probably explained by methodological differences such as variability in sample sizes and assessment methods. Specifically, variability in operationalisations of secondary traumatic stress symptomatology hampers comparability across studies and countries, and variation in scoring procedures among similar measures hampers even the comparability across studies applying identical measurement procedures.

Table 12: Prevalence of secondary traumatisation in child protection workers

Study	Year	Sample	Nationality	Measure	Mean (SD)	% rate over cut-off
Baugerud and colleagues	2018	684	Norway	ProQoL-5	21.14 (4.57)	36.9 % moderate, 0 % high
Bolic	2019	135	Serbia	TABS and ProQoL-5	- **	VT: 15 % ST: 20 %
Bride and collegues	2007	187	USA	STSS	38.2 (13.38)	34 % meet criteria
Conrad & Kellar-Guenther	2006	341 (completed CF)	USA	CSFST	-	Extremely: 34.2 % High: 15.7 %
Dagan and colleagues	2016	255 (124 CPW)	Israel	STSS	2.76 (0.59) *	-
Nelson-Gardell & Harris	2003	166	USA	CSFST	41.5 (11.48)	-
Salloum and colleagues	2015	104	USA	ProQoL-5	- **	28.8 % high
Sprang and colleagues	2011	577 (144 CPW)	USA/ Canada	ProQoL-R-IV	14.85 (12.21)	-
Van Hook and colleagues	2009	175	USA	ProQoL-R-IV	15.2	-
Williams and colleagues	2012	131	USA	TABS	175.02 (36.97)	-

Note: '-' indicates that the value has not been reported. *average item mean score, range 1-5. **Mean-value only reported after conversion to t-score. CSFST = Compassion Satisfaction/Fatigue Self-Test. ProQoL-R-IV (2005) Professional Quality of Life Scale-R-IV. ProQoL-5 (Stamm, 2010) Professional Quality of Life Scale-5. STSS (Secondary Traumatic Stress Scale, Bride et al., 2004). TABS (Trauma and Attachment Belief Scale) 84 item measure of vicarious trauma. The following studies also investigate prevalence rates of secondary traumatisation in child protection workers but were excluded from the table due to use of non-validated measures or lack of report of mean and percentage: Cornille & Meyers, 1999; Horwitz, 2006; Regehr et al., 2004.

The Professional Quality of Life framework is the most widely used framework to operationalise secondary traumatisation although it does not allow for diagnosis of secondary traumatisation as it does not operationalise the breadth and/or severity of individual symptoms required to meet the DSM-5 or ICD-11 criteria for posttraumatic stress following indirect exposure to trauma (different versions chronologically mentioned: CSFST, ProQoL-R-IV, ProQoL-5). Alternative measures of secondary traumatisation include the Secondary Traumatic Stress Scale

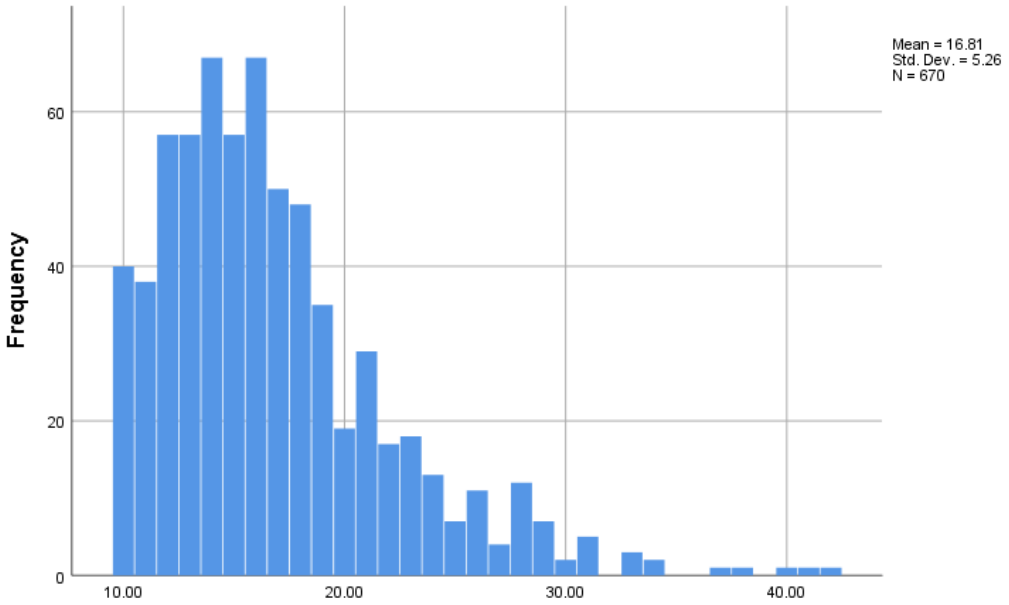
(STSS, Bride et al., 2007) operationalising symptoms of secondary traumatisation in a manner consistent with the diagnostic criteria for DSM-IV-R PTSD. Notably, one of the two studies employing the STSS found one the highest occurrence rate of secondary traumatisation out of the studies scoped in Table 12 (Bride, Jones & McMaster, 2007). While the STSS operationalises symptoms of secondary traumatisation in line with the DSM-IV-R symptom criteria for PTSD, limitations to this measure includes the lack of update to match the revised criteria in DSM-5 (APA, 2013) and a shortened timeframe for symptom assessment (referring to the last 7 days as opposed to 30 days as required for a formal diagnosis), meaning that this rate cannot be taken to reflect the rate of probable PTSD-caseness due to secondary exposure to trauma in the sample (APA, 2013).

Comparing within- and cross-country prevalence rates in studies conducted within the ProQoL-framework, American samples tend to exhibit higher prevalence-rates (28%, Salloum et al., 2015) than Scandinavian (0%, Baugerud et al., 2018) and Eastern European countries (20%, Bolíc, 2019). However, any conclusions regarding cross-country variation in incidence rates must be made with caution related to the applied scoring procedures on the ProQoL-5. The ProQoL manual offers a raw-score and a t-score approach to scoring the scales, and advices using the t-score approach (Stamm, 2010). The t-score is a standardized score whereby linear composite scores are transformed into having a mean of 50 and a standard deviation of 10 (McCall, 1939). Cautious cut-offs for the secondary traumatisation scale corresponding to the 25^{th} and the 75^{th} percentiles of the t-scores identify participants in low risk and high risk respectively. The cut-offs are provided based on a database of N=1289 participants and are purposefully over-inclusive as the measure is intended for screening (Stamm, 2010). The self-scoring section of the manual suggests a simpler

scoring procedure whereby a cut-off of 42 can be applied to the raw scores to indicate a t-score corresponding the 75th percentile (Stamm, 2010). The t-scoring procedure is particularly useful when comparing an individual's score relative to the sample to which s/he belong and might be used for interpreting performance on educational tests on abilities that are likely to be normally distributed in the population. However, there are two related problems with applying the t-score approach to scoring the ProQoL, particularly when this is done with an eye to estimating occurrence rates. These problems are statistical and practical in nature.

The statistical problem is related to the assumption of normality in the use of t-scores for interpreting scores on the ProQoL. It is uncontroversial that the occurrence of clinical syndromes and diagnoses such as PTSD is positively skewed in the population (Mortensen, 2006). However, the assumption of normally distributed scores in the sample are pivotal to the interpretation of the transformed scores, as skewed distribution of raw scores will bias the interpretation of individual ranking relative to the group mean (Cohen, Swerdilik & Sturman, 2010). As secondary traumatisation is conceived of as a syndrome identical to PTSD, it might be expected that using the recommended cut-offs for identifying participants at high and low risk for secondary traumatisation is biased due to skewed distributions. Indeed, the score distributions in the current sample as displayed in Figure 10 suggests that the data are strongly right-skewed.

Figure 10: Distribution of sum scores on the secondary traumatisation scale (ProQoL-5)



For these reasons, Mortensen (2006) caution against the use of t-scoring procedures for research purposes. Additionally, the t-scoring procedure is useful for reflecting an individual's position relative to other participants in the same sample (e.g. that have contributed to the same overall mean score), but this scoring procedure will inherently hamper comparability between studies using the ProQoL in different samples due to sample specific variation in severity that are obscured when linear composites are transformed to t-scores. This problem is furthermore pivotal as cut-offs on the ProQoL are established with reference to a databank containing N=1289 individuals that were not systematically assessed for indirect trauma exposure or work-setting (Stamm, 2010).

The practical problem is related to the properties of t-scores in combination with the use of cut-off scores in the literature. Both the raw scoring procedures (Baugerud et al., 2018) and the t-scoring procedure (Salloum et al., 2015) has been applied in published research, and although a raw score cut-off of 42 ought to correspond to a t-score of 56 (the 75th percentile, Stamm, 2010), this appears to not be the case when investigated empirically. For example, in the present survey of

Danish child protection workers, applying the raw cut-off score as prescribed in the self-scoring section, one participant (0.1 %) will be at high risk for secondary traumatisation, whereas application of the t-score approach results in 153 participants (22.8 %) at high risk for secondary traumatisation. While this difference is not inconsistent with the properties of the raw- vs. t-score approach under conditions of non-normality, the raw- and the t-score approaches produce vastly different results for estimating prevalence rates and are applied inconsistently across the literature with varying transparency on the scoring approach used, resulting in findings that appear comparable but in reality, is not. This constitutes the practical problem, and the potential consequences of the alternating use of these scoring procedures are dire for the purpose of cross-country and cross-professional comparison. At best, opportunities for comparison are currently obscure, at worst, non-existent. As the ProQoL is not a diagnostic tool (Stamm, 2010), a score in the high-risk range of the scale suggests a need for further assessment of potential secondary traumatisation and cannot be taken as an indication of the presence of the syndrome. Hence, for the purpose of the current study, an alternative scoring procedure that more readily can identify participants at risk for secondary traumatisation is needed.

Similarly, while burnout is not considered a clinical diagnosis (WHO, 2019a), some research has been conducted to identify levels of burnout and predictors of the syndrome among different Danish professional groups. The first Danish longitudinal study on occupational burnout, motivation and work-satisfaction was conducted by the National Research Centre for Work-Environment across the Danish working population (Borrtiz et al., 2005 Kristensen et al., 2005). Results from the project suggested that midwives, elder care workers and prison officers

were among the occupational groups with the highest level of burnout, whereas supervisors and office employees reported some of the lowest levels (Borritz et al., 2006). The NFA has not specifically reported risk or mean levels for child protection workers, however, levels of burnout among social workers were around the sample average (NFA, 2019). A limitation to the use of the Oldenburg Burnout Inventory to operationalising burnout in the current study is the lack of established cut-off values indicating potentially problematic levels of burnout. The measure has previously been used to assess levels of burnout among health care workers in the Netherlands, whereby a mean score of 2.53 and 2.38 was reported for emotional exhaustion and disengagement, respectively (Demerouti & Bakker, 2008), but for the purpose of the current study, an alternative scoring procedure that can identify participants most at risk for burnout is also needed.

5.1.2. Distress and functional impairment as indicators of employees at risk

Diagnostic cut-offs have the advantages of providing an easily applicable framework to categorizing employees at risk for detrimental work-related mental health outcomes. However, the limitations pertaining to a dichotomous approach to diagnosing the presence/absence of a mental health issue has been richly documented and include high comorbidity rates among supposedly distinct disorders and the possibility for two individuals with widely different symptom profiles to be diagnosed with the same disorder (Ruggero et al., 2019). For example, up to 70 % of people endorsing a diagnosis of PTSD have been found to have comorbid depression (Kessler et al., 1995), and in the current DSM-5 operationalisation of PTSD, there are more than 630,000 different ways to endorse symptoms consistent with a diagnosis of PTSD (Galatzer-Levy & Bryant, 2013). Based on existing research reflecting high correlations and cross-factor loadings between measures of secondary

traumatisation and burnout (Cieslak et al., 2013; Vang et al., 2020), as well as advanced statistical models suggesting that emotional exhaustion as constituent of burnout is statistically indifferentiable from depression or general psychopathology (Schonfeld & Bianchi, 2016), these problems are expectably replicated in any study trying to differentiate categorically between burnout and secondary traumatisation.

These problems have also led a consortium of researchers to propose a hierarchical taxonomy of psychopathology (HiTOP, Kotov, Krueger & Watson 2018) that forms a dimensional alternative to modelling psychological distress. Evidence has accumulated for some of the key theoretical notions of the HiTOP model including the general p-factor, a measure of general psychopathology, as well as broad spectra representing different phenotypes of psychopathology such as internalising, externalising and thought disorders (Kotov et al., 2017). These phenotypes contain lower order symptoms and syndromes that are currently summarised as symptoms in diagnoses in DSM-5 and ICD-11. For example, the internalising spectrum encompass fear and distress related symptoms such as those related to depression, anxiety and PTSD. Recently, researchers have provided guidelines for applying the HiTOP model in clinical practice that include operationalising psychological distress firstly on a continuum, thereby focusing on the severity of distress rather than artificial distinction between presence/absence of a disorder. This does not however preclude the use of a categorical approach, rather, authors propose that cut-off points for categorising individuals along this spectrum should be differentiated in accordance with their purpose. These could advantageously rely on ratings of general functional impairment and clinical risk for suicide (Ruggero et al., 2019).

Latent class models represent at fruitful statistical strategy to executing the recommendations above in practice (van Smeeden et al., 2013). Specifically, latent class analysis (LCA) is a statistical method used to estimate the presence of unobservable homogenous groups in the data based on patterns of item-endorsement. It is well-suited for identification of psychological constructs such as secondary traumatisation and burnout that are unobservable per se, but whose presence might be inferred through observable data related to the construct, such as item responses (Murphy, Houston & Shevlin, 2007). A central assumption of this procedure is that once individuals have been assigned class-membership, all systematic differences in their patterns of symptom endorsement have been accounted for, an assumption known as local independence (van Smeeden et al., 2013). The minimum model in case of the present study would be a 2-class model indicating the absence and presence of either syndrome. However, the assumption of conditional independence in a 2-class model, that the presence of a disorder accounts for all differences in symptom endorsement, might be too strict in cases of mental health-related syndromes that are generally highly comorbid and specifically in the current case where non-negligible cross-factor loadings have been identified that might correspond to non-specific symptoms of distress. Consequently, the estimation of more classes might be relevant to account for variability in symptomatology that cannot be accounted for strictly by the presence/absence of a work-related mental health disorder alone. The application of latent class analysis to identify accurate diagnostic classifications has been previously used to successfully identify people at risk for mental health disorder, somatic diseases and even the identification of a somatic disorder among cattle in the absence of a diagnostic golden standard (Farall, Maronna & Tetzlaff, 2011; Myrseth & Notelaers, 2018; van Smeeden et al., 2013).

5.1.3. Aim

The aim of the current study is to identify subpopulations at particular risk of secondary traumatisation and burnout. As there are no established cut-offs for categorising individuals at risk for burnout on the OLBI and due to extensive issues surrounding the existing cut-offs for secondary traumatisation on the ProQoL-5, the categorisation of individuals will be accomplished using latent class analysis (LCA). Based on factor loadings observed in the previous chapter, it is expected that more than two latent classes will account for variation in both indicators of burnout and indicators of secondary traumatisation. Based on the mean scores for burnout and secondary traumatisation in the previous chapter, it is expected that the majority of the participants will be at low risk for burn out and/or secondary traumatisation. The validity of the resultant classes will be tested using sum scores on indicators of burnout and secondary traumatisation specifically as well as mental health status and functional impairment in general. These include depression and anxiety as well as indicators of overall well-being and social and cognitive functional impairment.

5.2. Methods

5.2.1. Participants

All available participants were included in the current analysis provided that they had answered both the OLBI and the ProQoL-5. This resulted in a total sample of 667 participants, out of which 64 were Children Centre employees, 542 were municipal employees and 61 were police employees. This sample was identical to the sample used in chapter 4.

5.2.2. Measures

Burnout was operationalised using the OLBI and secondary traumatisation was operationalised using the ProQoL-5. Details on their properties are found under their respective sections in chapter 3. Class-indicators were dichotomized scores on

secondary traumatisation (ProQoL) and burnout (OLBI), where 0 indicated the absence of a symptom, 1 indicated the presence of a symptom. The 5-point ProQoL items were coded such that 1 (‘never) and 2 (‘a little’) equalled 0, and 3 to 5 (‘sometimes’ to ‘very often’) equalled 1. The 4-point OLBI items were coded such that 0 and 1 (‘highly disagree’ and ‘disagree’) equalled 0, and 2 and 3 (‘agree’ and ‘highly agree’) equalled 1. Sum scores on the ProQoL for measuring secondary traumatisation (ProQoL) as well as sum scores on the OLBI for measuring burnout in dimensions of emotional exhaustion and disengagement was used to validate the resultant classes. To facilitate interpretation of the occurrence of secondary traumatisation and burnout in a Danish sample of child protection workers, mean scores and standard deviations in international studies using the ProQoL-5 and OLBI is reported for comparison. Specifically, mean scores and standard deviations from a study of Norwegian child protection workers (M= 21.1, SD= 4.6, Baugerud, Vangsbæk & Melinder, 2018) reviewed in chapter 2 was chosen as comparison group for secondary traumatisation as conditions of Norwegian child protection workers is expected to be most closely resembling Danish conditions among the available evidence. On a similar rationale, means and standard deviations on the OLBI in a study of Dutch health care professionals (Demerouti & Bakker, 2008) were the best available comparison group for burnout scores.

Additionally, continuous scores on common mental health disorders, indicators of functional impairment and general wellbeing were used to validate the classes. These included the PHQ-9 for measuring depression, the GAD-7 for measuring anxiety, the WHO-5 for measuring general well-being, and subscales on the WHODAS for measuring cognitive and social functional impairment. For levels of depression and anxiety, cut-off scores of 10 indicating moderate severity was used

(Kroenke & Spitzer, 2002; Spitzer, Kroenke, Williams & Löwe, 2006). The WHO-5 is a measure of general well-being validated in the Danish population. A general population mean of 68.7 (SD=19) was used as reference for the current study as well as cut-offs of 50 and 35 with scores below indicating the possibility for a stress-related disorder and the likely presence of depression or a stress-related disorder, respectively (Bech, Olsen, Kjøller & Rasmussen, 2003).

5.2.3. Data analysis

The analysis was comprised of two linked stages. First, two latent class analyses were conducted to identify groups of participants with similar response patterns on the ProQoL-5 and the OLBI questionnaire, respectively. Latent class analysis assigns participants to latent classes on a probabilistic basis based on their item response patters. The fit of six models (a one- through six-class model) was assessed, and model fit was estimated using robust maximum likelihood applying all available data for model estimation (Yuan & Bentler, 2000). To avoid solutions based on local maxima, 1,000 random sets of starting values and 500 final stage optimizations were used. The relative fit of the models was compared by using three parsimony corrected fit indices: Akaike Information Criterion (AIC; Akaike, 1987), Bayesian Information Criterion (BIC; Schwarz, 1978), and sample size–adjusted BIC (ssaBIC; Sclove, 1987). The model that produces the lowest values can be judged as the best model provided that classes are differing qualitatively from each other (Debowska, Willmott, Boduszek & Jones, 2017; Schwarz, 1978). The Lo-Mendell-Rubin adjusted likelihood ratio-test (LMRT; Lo, Mendell, & Rubin, 2001) and bootstrapped likelihood ratio-test (BSLRT, McLachlan & Peel, 2000) was used to assess whether models with additional classes constituted a significant improvement in describing the data compared to the previous models. When a non-

significant value ($p > 0.05$) occurs, this suggests that the model does not provide a statistically significantly better description of the data better than the previous model. Finally, the entropy of each solution was assessed to ensure adequate classification of individuals. Values closer to 1 are indicative of better classification (Ramaswamy, DeSarbo, Reibstein, & Robinson, 1993).

Second, the associations between the latent classes from stage 1 and indicators of mental health status was tested using the DU3STEP command for secondary traumatisation and the DE3STEP command for burnout. The DU3STEP and DE3STEP commands are similar versions of the three-step latent class approach recommended for testing the relationship between class-membership and continuous outcomes (Asparouhov & Muthén, 2014). This approach estimates the relationship between class-membership and outcomes while considering the classification inaccuracy of individuals as indicated by the entropy-values. The DE/U3STEP procedure is analogous to a multivariate ANOVA where class-membership is the independent variable and total scores are the dependent variables. The DU3STEP is the recommended procedure for these types of analyses, however, in cases where convergence problems are encountered the DE3STEP can be employed with similar properties. Finally, a chi-square analysis was used to test the relationship between class membership on the ProQoL-5 and OLBI. All models were specified and estimated using Mplus (Version 8.1; Muthén & Muthén, 2011) apart from the chi-square analysis that was conducted in SPSS version 25.

5.3. Results

The following section will summarize results from the analyses described in the preceding for the measures of secondary traumatisation and burnout.

5.3.1. Secondary traumatisation

Table 13 displays the results of the latent class analysis of symptom endorsement on the ProQoL-5. All models specifying two or more classes in the data exhibited a significant drop in AIC, BIC and ssaBIC-values compared to the one-class solution, suggesting that there are statistically significantly different patterns of item-responses among groups of participants. When interpreting fit-statistics to identify the model best describing these patterns, simulation studies suggest that the BIC is the best indicator of goodness of fit as it weights the model's explanatory powers against its' parsimony by heavily penalizing model complexity (Nylund et al., 2007). A difference in the BIC of 10 corresponds to 'very strong' evidence in favour of the model with the more negative value (Raferty, 1995).

Of the remaining models, the three-class solution displayed a BIC-value approximately 27 and 44 points lower than the two-class and four-class solution, respectively. The extra class represented a statistically significant contribution over the two-class model as per the LRMT and BSLRT-values, and upon inspection of the profile-plot, the additional class differed qualitatively from the remaining classes in a way that was consistent with existing theory, thereby satisfying the criterion of qualitative difference (Debowska, Willmott, Boduszek & Jones, 2017). Entropy values closer to 1 are desirable, and as the entropy value for the three-class solution remained above .80 this was deemed within an acceptable range (Ramaswamy et al., 1993). Taken altogether, the three-class solution was chosen as the best fitting model. The average posterior probabilities ranged from .896 (class 2) to .938 (class 3).

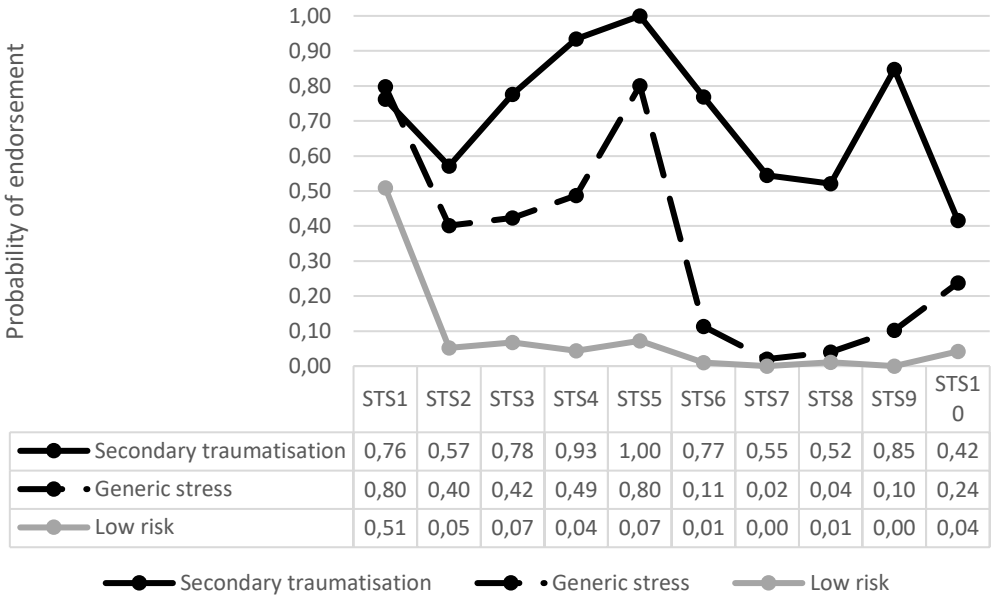
Table 13: Fit statistics for the LCA of symptom endorsement on ProQoL-5

	-2LL	X2 (df)	AIC	BIC	ssaBIC	Entropy	LMRT	BSLRT
1	-2589.632	1870.952 (991)	5199.264	5244.337	5212.586	-	-	-
2	-2248.024	1475.798 (997)	4538.049	4632.702	4566.025	0.851	673.802 (0.0000)	683.215 (0.0000)
3	-2196.086	644.259 (989)	4456.171	4600.404	4498.802	0.832	102.447 (0.0002)	103.878 (0.0000)
4	-2182.814	615.415 (979)	4451.628	4645.441	4508.913	0.867	26.177 (0.0316)	26.543 (0.0300)
5	-2170.202	479.751 (967)	4448.404	4691.797	4520.343	0.858	24.877 (0.1324)	25.225 (0.1579)
6	-2161.646	429.479 (957)	4453.291	4746.265	4539.885	0.876	16.876 (0.1762)	17.112 (0.5000)

Note: -2LL: - 2 times the loglikelihood. AIC: Akaike Information Criterion. BIC: Bayesian Information Criterion. ssaBIC: Sample-size adjusted BIC. LMRT: Lo-Mendel-Rubin adjusted LRT-test. BSLRT: Parametric bootstrapped likelihood-ratio test.

The profile plot and probabilities for the three-class solution are shown in Figure 11. Class 1 was the smallest group comprising 4% of the sample (n=27) and was characterized by the highest risk of endorsing all symptoms. Compared to the other groups, participants displayed a particularly elevated risk of endorsing symptoms 6 to 9 that refer to experiences related particularly to clients traumatic experiences: 6 (depressed because of others' trauma), 7 (living others' trauma), 8 (avoidance of reminders of others' trauma), 9 (intrusions of details of others' trauma). Hence, this class was termed 'secondary traumatisation'. This class was comprised of 92.3% women (n = 24) and had a mean age of 38.6 years (SD = 11.2). A total of 18.5% were Children Centre employees (n=5), 77.8% municipal employees (n=21) and 0.6% police employees (n=1).

Figure 11: Profile plot of the three-class solution



	STS1	STS2	STS3	STS4	STS5	STS6	STS7	STS8	STS9	STS10
Secondary traumatisation	0,76	0,57	0,78	0,93	1,00	0,77	0,55	0,52	0,85	0,42
Generic stress	0,80	0,40	0,42	0,49	0,80	0,11	0,02	0,04	0,10	0,24
Low risk	0,51	0,05	0,07	0,04	0,07	0,01	0,00	0,01	0,00	0,04

Note: Due to country specific notation, commas in the figure are represented using ',' in place of '.'. STS1: Preoccupied with more than 1 client. STS2: Startle. STS3: Difficulty separating personal/professional life. STS4: Affected by others' traumatic stress. STS5: Tense/uneasy due to helping others. STS6: Depressed because of others' trauma. STS7: Experiencing others' trauma. STS8: Avoidance of reminders of others' trauma. STS9: Intrusions of others' trauma. STS10: Forgetting important parts of work with traumatized clients.

Class 2 comprised 24% of the sample (n=161) and was characterized by elevated risk of endorsing symptoms 1-5. As these items refer to generic stressful experiences related to working with clients that are not specifically posttraumatic in their expression, this class was labelled 'generic stress'. This class was comprised of 93.8% women (n = 151) and had a mean age of 38.2 years (SD = 10.8). A total of 9.9 % were Children Centre employees (n=16), 89.4 % municipal employees (n=144) and 0.6% police employees (n=1).

Class 3 was the largest group and comprised 72% of the sample (n=482). It was characterized by the lowest risk of endorsing all symptoms and displayed a moderate risk of endorsing STS1 denoting preoccupation with more than 1 client. This class was labelled 'low risk' and was comprised of 85.3 % women (n = 411) and had a mean age of 42.4 years (SD = 11). A total of 8.9 % were Children Centre

employees (n=43), 78.8% municipal employees (n=380) and 12.2% police employees (n=59).

Table 14 shows the results from the second step of the analysis, investigating the relationship between class-membership and mental health status indicators using the auxiliary variable approach.

Table 14: Relationship between class membership and mental health status indicators (ProQoL-5)

	PHQ9	GAD7	WHO5	OLBI Exh.	OLBI Disen.	STS	tSTS	Cog. FI	Soc. FI
Secondary traumatisation[1]	10.22 (1.15)[3]	9.69 (.91)[2,3]	33.85 (3.21)[3]	3.08 (.08)[2,3]	2.76 (.10)[2,3]	31.23 (.89)[2,3]	77.41 (1.68)[2,3]	7.95 (.94)[3]	8.69 (1.11)[2,3]
Generic stress[2]	8.91 (.37)[3]	6.74 (.35)[1,3]	41.86 (2.26)[3]	2.79 (.04)[1,3]	2.43 (.04)[1,3]	21.64 (.28)[1,3]	59.18 (.52)[1,3]	6.62 (.32)[3]	6.28 (.31)[1,3]
Low risk[3]	3.05 (.18)[2,1]	1.98 (.13)[1,2]	65.11 (1.35)[1,2]	2.27 (.02)[1,2]	2.09 (.02)[1,2]	14.21 (.12)[1,2]	45.05 (.23)[1,2]	1.79 (.23)[1,2]	1.22 (.16)[1,2]

Note: Values are M (SE). Superscript numbers indicate classes that differ significantly from each other at $p < .05$ in a chi-square test. Class 1: low risk, class 2: secondary traumatisation, class 3: generic stress.

Overall, the secondary traumatisation group displayed the most adverse profile across all mental health status indicators. It was the only group that displayed mean scores on depression that met the cut-off for moderate severity, although there was no statistically significant difference between the secondary traumatisation group and the generic stress group. Similarly, the secondary traumatisation group scored statistically significantly higher on anxiety compared to both generic stress and the low risk group and scored on average just below the cut-off for moderate anxiety. Participants in this group were statistically significantly more exhausted and disengaged and displayed statistically significantly more social functional impairment than the generic stress groups. The secondary traumatisation group scored below the cut-off of 35 for the general wellbeing scale that suggests the presence of a long-term stress-related condition or depression, whereas the generic

stress group scored below the cut-off of 50, indicating the need for potential screening for further mental health issues. Finally, the low risk group scored above the cut-off of 50, indicating general well-being.

5.3.2. Burnout

Table 15 displays the results of the latent class analysis of symptom endorsement on the OLBI burnout scale.

Table 15: Fit statistics for the LCA of symptom endorsement on the OLBI

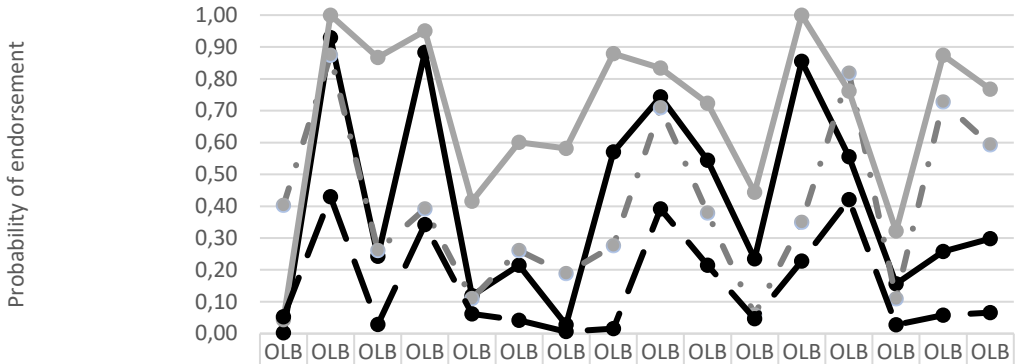
	-2LL	X2 (df)	AIC	BIC	ssaBIC	Entropy	LMRT	BSLRT
1	-6150.345	16920.595 (65408)	12332.690	12404.734	12353.934	-	-	-
2	-5533.107	8541.780 (65430)	11132.214	11280.806	11176.029	0.808	1223.409 (0.0000)	1234.476 (0.0000)
3	-5411.979	6728.799 (65407)	10923.958	11149.097	10990.344	0.758	240.084 (0.0117)	242.256 (0.000)
4	-5335.942	5955.195 (65395)	10805.883	11107.570	10894.841	0.763	150.711 (0.0534)	152.074 (0.0000)
5	-5296.272	5944.349 (65384)	10760.544	11138.778	10872.073	0.769	78.628 (0.2341)	79.339 (0.0000)
6	-5255.818	6556.030 (65377)	10713.636	11168.418	10847.737	0.769	80.182 (0.0233)	80.908 (0.0000)

Note: -2LL: - 2 times the loglikelihood. AIC: Akaike Information Criterion. BIC: Bayesian Information Criterion. ssaBIC: Sample-size adjusted BIC. LMRT: Lo-Mendel-Rubin adjusted LRT-test. BSLRT: Parametric bootstrapped likelihood-ratio test.

All models specifying two or more classes in the data exhibited a significant drop in AIC, BIC and ssaBIC-values compared to the one-class solution, suggesting that there are statistically significantly differing patterns of item-responses among participants. The four-class solution displayed the lowest BIC-value that was approximately 41 and 31 points lower than the three-class and five-class solution, respectively. The extra class represented a statistically significant contribution over the three-class model as per the BSLRT-values, and upon inspection of the profile-plot, the additional class differed qualitatively from the remaining classes. Entropy-values for all classes were generally low, and while entropy of the four-class solution was among the lower values, it was not deemed sufficiently low to reject this class-solution compared to the alternatives. Taken altogether, the four-class solution was

chosen as the best fitting model. The average posterior probabilities ranged from .835 (class 2) to .913 (class 1). The profile plot and probabilities for the four-class solution are shown in Figure 12.

Figure 12: Profile plot of the four-class solution



	OLB I1	OLB I2	OLB I3	OLB I4	OLB I5	OLB I6	OLB I7	OLB I8	OLB I9	OLB I10	OLB I11	OLB I12	OLB I13	OLB I14	OLB I15	OLB I16
Elevated EE	0,00	0,93	0,24	0,88	0,12	0,22	0,03	0,57	0,74	0,54	0,24	0,86	0,56	0,16	0,26	0,30
Elevated Diseng	0,40	0,87	0,26	0,39	0,11	0,26	0,19	0,28	0,71	0,38	0,06	0,35	0,82	0,11	0,73	0,59
High BO	0,04	1,00	0,87	0,95	0,42	0,60	0,58	0,88	0,83	0,72	0,44	1,00	0,76	0,32	0,87	0,77
Low risk	0,05	0,43	0,03	0,34	0,06	0,04	0,01	0,02	0,39	0,22	0,05	0,23	0,42	0,03	0,06	0,07

Note: Items 2, 3, 4, 6, 8, 9, 11 and 12 have been reverse scored prior to the LCA to indicate levels of burnout. 1: New and interesting aspects of work. 2: Tired before work. 3: Talk negative about work. 4: More time after work to relax. 5: Tolerate pressure well. 6: Automatic. 7: Work is a positive challenge. 8: Emotionally drained. 9: Emotionally disconnected. 10: Enough time for leisure activities. 11: Sickened by work tasks. 12: Worn out/weary. 13: Only imaginable work. 14: Manage amount well. 15: More and more engaged. 16: Energized while working.

Class 3 and 4 displayed the most extreme distributions of probabilities with class 3 showing the highest risk of endorsing nearly all symptoms and class 4 showing the lowest risk of endorsing nearly all symptoms. Class 1 and 2 displayed varying patterns of probabilities for symptom endorsement within the span of Classes 3 and 4.

Class 3 was comprised of 18.3% of the sample (n=122) and displayed the highest probability of endorsing all items apart from item 1. This class was labelled ‘High burnout (BO)’ and contained 87.7% women (n = 107) and had a mean age of

37.6 years (SD = 10.4). A total of 4.9 % were Children Centre employees (n=6), 86.9% municipal employees (n=106) and 8.2% police employees (n=10).

Class 4 comprised 32.4% of the sample and displayed the lowest probability of endorsing all items apart from item 13 (n=216). This class was labelled 'low risk' and contained 90.2 % women (n = 194) and had a mean age of 42.8 years (SD = 10.5). A total of 11.6 % were Children Centre employees (n=25), 78.7% municipal employees (n=170) and 9.7 % police employees (n=21).

Class 1 was comprised of 32.8 % (n=219) of the sample and displayed elevated probabilities of endorsing symptoms of exhaustion compared to class 2. This class was labelled 'Elevated emotional exhaustion'. The class contained 88.6% women (n = 194) and had a mean age of 41.7 years (SD = 11.9). A total of 7.8% were Children Centre employees (n=17), 87.2% municipal employees (n=191) and 5% police employees (n=11).

Class 2 was the smallest group and comprised of 16.5% of the sample (n=110). It displayed slightly elevated probabilities of endorsing symptoms of disengagement compared to class 1. Consequently, this class was labelled 'Elevated disengagement'. The class contained 80% women (n = 88) and had a mean age of 41.2 years (SD = 10.5). A total of 13.6 % were Children Centre employees (n=15), 69.1% municipal employees (n=76) and 17.3% police employees (n=19).

Table 16 display the results from the second step of the analysis, investigating the relationship between class-membership and mental health status indicators using the auxiliary variable approach. All classes differed statistically significantly from each other on all indicators of mental health status with the high-risk class displaying the most detrimental scores as well as being the only class displaying mean scores surpassing the cut-off for moderate depression and bordering

on moderate anxiety. Similarly, only the high risk group scored below the cut off of 35 on the general well-being scale, indicating the presence of a potential long-term stress condition or depression, and displayed the highest mean scores on burnout dimensions, secondary traumatisation and functional impairment.

Table 16: Relationship between class membership and mental health status indicators (OLBI)

	PHQ9	GAD7	WHO5	OLBI Exh.	OLBI Disen.	STS	tSTS	Cog. FI	Soc. FI
Emotional exhaustion	5.49 (.44) 2,3,4	3.87 (.32) 2,3,4	52.5 (1.66) 2,3,4	2.62 (.02) 2,3,4	2.18 (.02) 2,3,4	17.83 (.53) 2,3,4	51.94 (1.01) 2,3,4	3.87 (.44) 2,3,4	3.61 (.46) 2,3,4
Disen-gagement	3.4 (.27) 1,3,4	2.29 (.25) 1,3,4	61.44 (2.14) 1,3,4	2.34 (.03) 1,3,4	2.38 (.02) 1,3,4	15.19 (.31) 1,3,4	46.91 (.58) 1,3,4	2.03 (.23) 1,3,4	1.86 (.26) 1,3,4
High BO	10.56 (.83) 1,2,4	8.35 (.13) 1,2,4	33.75 (1.68) 1,2,4	3.03 (.03) 1,2,4	2.84 (.03) 1,2,4	21.53 (.91) 1,2,4	58.98 (1.74) 1,2,4	7.8 (.68) 1,2,4	6.51 (.72) 1,2,4
Low BO	2.12 (.16) 1,2,3	1.23 (.13) 1,2,3	74.84 (.76) 1,2,3	1.96 (.02) 1,2,3	1.76 (.03) 1,2,3	13.91 (.22) 1,2,3	44.48 (.42) 1,2,3	1.3 (.15) 1,2,3	1.25 (.14) 1,2,3

Note: Numbers indicate classes that differ significantly from each other at $p < .05$ in a chi-square test. Class 1: Elevated emotional exhaustion, class 2: Elevated disengagement, class 3: High BO. Class 4: Low BO.

Finally, a chi square analysis was conducted to assess the relationship between class membership on burnout and secondary traumatisation. There was an overall statistically significant difference across class memberships ($\chi^2(6) = 104.9$, $p < .001$). Table 17 displays counts, percentages and standardized residuals across classes.

Table 17: Chi-square (χ^2) analysis of class membership across burnout and secondary traumatisation

			OLBI			
			High burnout	Elevated emotional exhaustion	Elevated disenga-gement	Low risk
ProQoL-5	Secondary traumatisation	Count	15	11	0	0
		% within ProQoL-5	57.7 %	42.3 %	0 %	0 %
		% within OLBI	4 %	5 %	0 %	0 %
		Standardized residual	4.7	.8	-2.1	-2.9
	Generic stress	Count	55	59	22	20
		% within ProQoL-5	35.3 %	37.8 %	14.1 %	12.8 %
		% within OLBI	45.5 %	27.1 %	20.2 %	9.5 %
		Standardized residual	4.9	1.0	-.8	-4.2
	Low risk	Count	51	148	87	190
		% within ProQoL-5	10.7 %	31.1 %	18.3 %	39.9 %
		% within OLBI	42.1 %	67.9 %	79.8 %	90.5 %
		Standardized residual	-3.9	-.8	.9	3.1

Note: OLBI: Oldenburg Burnout Inventory. ProQoL-5: Professional Quality of Life Scale-5.

Standardized residuals can be interpreted similarly to odds ratios, however, while odds ratios refer to relative odds compared to overall likelihood of endorsing a category, standardized residuals are normally distributed and interpreted with reference to the standard deviation where values ≥ 1.96 indicate a statistically significant difference between the expected and actual class-count at $p \leq .05$. Standardized residuals from the current analysis suggest that respondents in the secondary traumatisation and generic stress class as measured by the ProQoL were significantly more likely to simultaneously be categorized in the high burnout class,

and that the low risk groups were statistically significantly more likely to overlap across the measures.

5.4. Discussion

The purpose of the current chapter was to derive an alternative procedure for grouping participants according to their level of occupational well-being on measures of secondary traumatisation and burnout using latent class analysis. These groups were validated through their relationship to other indicators of mental health and functional impairment.

Results from the latent class analyses suggested that participant endorsement of symptoms across secondary traumatisation and burnout vary in interpretable patterns within each measure. Most notable was the minor group of 4 % participants endorsing items most strongly measuring symptoms of secondary traumatisation as per the factor loadings in chapter 4. This group of participants scored statistically significantly higher on indices of secondary traumatisation, burnout and social functional impairment compared to generic stress and the low-risk group. While the secondary traumatisation group did not differ statistically significantly from the generic stress group on depression, participants in this group displayed significantly lower levels of overall wellbeing scoring below the cut-off of 35 on the scale, indicating the likely presence of a depressive condition or stress-related disorder. Of particular importance is the mean scores ProQoL-5 as per the recommended t-score approach (tSTS) for the secondary traumatisation and generic stress groups as both score above the cut-off for high risk of secondary traumatisation but display significantly different profiles of distress and functional impairment. Specifically, participants endorsing experiences consistent with STS items 6-9 are experiencing a potential risk to their occupational well-being.

A similar pattern was identified for participants' endorsement of symptoms of burnout with approximately 1/5 of the participants displaying a high-risk profile for burnout that was consistently related to worse mental health and functional outcomes as this was the only class identified among the burnout items that on average displayed moderate levels of depression as well as average wellbeing scores indicating the likely presence of a depressive condition or a stress-related condition. Consequently, the secondary traumatisation group and the high risk of burnout group were considered to describe participants at elevated risk of both conditions and therefore of key interest to the purpose of the current study.

Apart from addressing the key purpose of identifying participants at elevated risk for detrimental work-related mental health outcomes, findings from the current analysis carry important implications for practice and research alike. Overall, the risk of secondary traumatisation in Danish child protection workers appear to be notably lower (4 %) compared to rates reported in international studies. This is likely due to an overestimation of the number of employees in high risk of secondary traumatisation in existing research as the recommended cut-offs on the ProQoL-5 confounds secondary traumatisation with generic stress. Notably, the generic stress group represented 24 % of the total 28 % of participants in the current study surpassing the cut-off on the ProQoL for high risk of secondary traumatisation, bringing the Danish rates closer to the rates reported in international research. Findings from the current study on levels of associated distress and functional impairment should however discourage the equation of these groups of participants. Based on the items characterising the generic stress profile, it could be hypothesised that these items are simultaneous indicators of burnout in the ProQoL-5 measure of secondary traumatisation, thereby further explaining the high correlations seen

between ST and BO in existing research (Cieslak et al., 2013). If so, participants in the generic stress class on the ProQoL-5 should be highly represented in the high-risk class on the OLBI measure, which is the case considering standardized residuals with a magnitude of 4.9. However, while the generic stress class is overrepresented in the high burnout class, more than half the participants are spread across the elevated emotional exhaustion, elevated disengagement and low risk classes, respectively, suggesting that ProQoL-5 items characteristic of this class might be confounding burnout and non-specific symptoms of stress that sometimes co-occur with the core symptoms of secondary traumatisation.

Participants in the secondary traumatisation group were overrepresented in the classes characterised by high levels of burnout and slightly elevated levels of exhaustion. The extensive overlap of participants between these classes might be explained by burnout as a risk factor for secondary traumatisation as demonstrated by Shoji et al. (2015), or might be explained by the similar phenomenology of burnout and secondary traumatisation that in their likeness to depression (Schonfeld, Verkuilen & Bianchi, 2019) and PTSD (Figley, 1995) respectively both reflect symptoms of internalising psychopathology (Kotov et al., 2017). For practice, these findings suggest that a minority group of participants appear to be experiencing significant distress related both to work with traumatized clients as indicated by symptoms of secondary traumatisation and to working conditions more generally as indicated by symptoms of burnout.

5.4.1. Conclusion

The present study identified core symptoms of secondary traumatisation on the ProQoL-5, suggesting that individuals experiencing phenomena consistent with items 6-9 might be at increased risk of experiencing clinically relevant levels of secondary traumatisation as per the relationships of this group to distress and

functional impairment. Only a minor group (4 %) of the current sample displayed elevated risk of secondary traumatisation, whereas one fifth displayed elevated risk of burnout (18.3 %).

For clinical practice, these findings suggest first and foremost that practitioners and supervisors' efforts to detect problematic levels of secondary traumatisation should be directed at employees exhibiting a symptom profile consistent with that of the secondary traumatisation group in the current study. Furthermore, they suggest that although secondary traumatisation is associated with higher levels of social and cognitive functional impairment, this syndrome should elicit less concern compared to rates of burnout that were more than four times higher among the current sample, especially since participants in high risk of burnout exhibited similar levels of distress in terms of average scores equalling moderate depression and levels of well-being compared to the secondary traumatisation group.

5.4.2. Limitations and directions for future research

Limitations to the current study include the cross-sectional nature of the data as well as a relatively small sample-size for the secondary traumatisation group. Simulation studies have suggested that latent classes comprising less than 5 % of the sample might cause problems related to stability and replicability of classes, and while the secondary traumatisation class displayed statistically significant differences in mental health and functional impairment status, future studies using latent class analysis are encouraged to use recruit even larger samples than the current (N=667) to test the replicability of findings from the current study. Additionally, future research is needed to examine whether the latent class structures of the measures are replicated across other professional groups or whether symptom constellations might differ according to profession. Similarly, more research is

needed to explore whether the issue of confounding symptoms of secondary traumatisation with generic stress or burnout is specific to ProQoL-5 or replicated across alternative measures of secondary traumatisation. Based on the current findings, future research on secondary traumatisation should either avoid the ProQoL-5 or use alternative scoring procedures to avoid confounding secondary traumatisation with burnout and/or non-specific stress. Future research is also needed to explore the temporal stability of symptom endorsement of particularly secondary traumatisation as well as their relationship to symptoms of burnout across time. Finally, additional research is needed to explore individual, operational and organisational predictors of high risk groups of burnout and secondary traumatisation to inform the development strategies for prevention of these outcomes.

Chapter 6:

Risk and resilience profiles for burnout and secondary traumatisation in Danish child protection workers: Evidence for generality and specificity

Abstract

Child protection workers are at risk of developing secondary traumatisation and burnout through the course of their professional duties. However, our understanding of the risk and protective factors for the development of these syndromes is limited as research tend to focus predominantly either on exposure to trauma or exposure to adverse working conditions in explaining their occurrence. The aim of the present chapter is to identify shared risk and resilience factors for burnout and secondary traumatisation across individual, operational and organisational factors. This is accomplished using latent class analysis and regression analysis on survey data collected from a cohort of 670 Danish child protection workers. Results suggested that burnout and secondary traumatisation have shared risk and protective factors across both individual, operational and organisational factors. There was also specificity in the relationship to individual and organisational factors for burnout and secondary traumatisation. Findings from the current study support recommendations for organisational structure in mitigating the risk of burnout and secondary traumatisation in trauma-exposed organisations. Specificity in the relationship to certain risk and protective factors provide additional promising targets for preventive efforts.

Contents

6.1. Introduction

Theoretical accounts of the development of secondary traumatisation, have emphasised operational content of work, that is the indirect trauma exposure, and individual factors such as coping- and self-care strategies as central risk and protective factors (Figley, 2002; Ludick & Figley, 2017; McCann & Pearlman, 1990; Stamm, 1995). This emphasis is mirrored in existing literature with the addition of personal trauma history as a central risk factor; however, our understanding of the relationships of these factors to secondary traumatisation is in its infancy, and studies investigating their salience report conflicting findings (Chapter 1, section 1.4.). Recent research among social workers in training suggest that the salience of individual trauma history might be moderated by retraumatisation caused by exposure to trauma in coursework and clinical training (Butler, Carello & Maguin, 2017). Similarly, although clinicians believe self-care strategies to be effective measures in preventing the development of secondary traumatisation, this belief does not translate into time spent on self-care strategies (Bober & Regehr, 2006). Moreover, trauma-informed self-care strategies have been found to lower the risk of reporting high levels of burnout, but not secondary traumatisation (Salloum et al., 2015). Recent research among military mental health care professionals might be taken to suggest that overall confidence in handling secondary traumatisation is be of greater importance than specific self-care strategies as levels of secondary trauma self-efficacy was negatively related to secondary traumatisation in this study (Shoji et al., 2015). Despite these inter-study differences, evidence from a recent meta-analysis summarising evidence across 38 studies on risk and protective factors for secondary traumatisation among therapists found a statistically significant effect of indirect exposure and personal trauma history as risk factors for secondary traumatisation, whereas social and work support were among the strongest protective

factors (Hensel et al., 2015). These findings align with research on burnout and individual studies of secondary traumatisation among child protection workers that reported social support as a consistent protective factor for both outcomes (Craun, Bourke, Bierie & Williams, 2014; Ludick & Figley, 2017). Specifically, Bonach & Heckert (2012) found that support was the only protective factor against the development of secondary traumatisation in child forensic interviewers in Child Advocacy Centers (an American organisation similar to the Danish Children Centres) out of organisational satisfaction and organisational buffers such as job-efficacy, multidisciplinary teams and supervisor relationship. This might be due to the fact that child forensic interviewers have little influence on and knowledge about what happens to the child following the completion of their task, meaning that social support at work is their only source of positive feedback (Bonach & Heckert, 2012). Additionally, although supervision is often enhanced as an important form of support in preventing secondary traumatisation among staff exposed to indirect trauma (Pross, 2011), supervision did not display a statistically significant protective effect in the meta-analysis (Hensel et al., 2015).

Much research on the topic of secondary traumatisation has been guided by Charles Figley's definition and associated model of its' development that emphasise empathic concern and ability of the professional and exposure to a traumatised client. Following the empathic encounter, the professional is likely to experience residual compassion stress (later renamed 'secondary traumatic stress': Ludick & Figley, 2017), referring to residual emotional activation from empathising with the client. Residual compassion stress is proposed to be moderated by satisfaction and ability to disengage from the responsibility to help the client (Figley, 2002). Depending on the successful alleviation of residual compassion stress, this might

develop into compassion fatigue (that is used synonymously with secondary traumatisation) depending on the degree of general life disruption, intrusive memories and prolonged exposure to traumatic material (Figley, 2002). Recent expansions of this theory include the addition of self-care and social support as moderating factors of residual compassion stress (Ludick & Figley, 2017), thereby incorporating the evidence for social support as a protective factor in the theoretical model. However, this theoretical account might place undue emphasis on individual and operational factors while neglecting the significant influence of the wider context in which they exist. For example, satisfaction with one's own efforts to help clients is likely moderated by having a clearly defined task for which adequate resources are available, and by whether employees must address competing demands in their case-work, such as providing highly needed but expensive interventions to an abused child during a period of funding cut-backs. A Norwegian study of child protection workers has indeed supported role conflict as a significant risk factor of secondary traumatisation and burnout alike, and international research has supported the importance of role-clarity for job satisfaction and job performance (Abramis, 1994), as well as supervisor satisfaction (Zheng, Thundiyil, Klinger & Hinrichs, 2014) and burnout and intent to leave among child protection workers (Travis, Lizano & Mor Barak, 2016). Likewise, role conflicts have been linked to increased risk of burning out also among Danish human service workers (Borritz et al., 2005).

Additionally, the ability to disengage from professional responsibilities following the professional encounter with a traumatised client is likely related to the extent to which the professional is able to provide the client with adequate and relevant help during the encounter, an ability that is highly dependent on the clinicians therapeutic skills, available resources in the organisation as well as the

professional's role in the encounter. A recently published longitudinal study of Swedish social workers investigated the development in working conditions and job content from 2003 to 2014 and found that social workers self-reported working conditions has deteriorated significantly. Child protection workers experienced on average higher demands and lower influence on their work, and although they experienced higher role-clarity, this clarity was related to duties that ought to be done differently or requiring more resources than allocated to adequately meet the demands (Tham, 2018). Additionally, there had been large changes in daily job content. Through 2003 to 2014, there had been a decrease in amount of time spent in direct contact with clients, as well as an extreme increase in specialisation. Specifically, time spent in contact with clients most often consisted of assessment, and the percentage of employees providing advice and support, treatment, or working with prevention as part of their professional role had been reduced markedly from 84% to 9%, 20% to 2%, and 39% to 9%, respectively (Tham, 2018). Similar changes related to job content are observed in the Danish child protection system where the Danish Children Centres represent a recently founded unit specialised solely in assessment of children exposed to abuse. Similarly, tentative reasons proposed for the development in Sweden include new public management, increased formalisation of tasks as well as increased amounts of paperwork (Tham, 2018) that are becoming increasingly characteristic of the Danish human service sector as well. Taken altogether, these findings suggest that there is a present need to consider the organisational context as a factor of central importance to understand work-related traumatic stress.

Recently, alternative perspectives on secondary traumatisation that more explicitly incorporate organisational culture and context as causal factors have been

offered starting from organisations working with survivors of torture and persecution (Pross, 2014). Specifically, it has been proposed that structural deficiencies, such as lack of professional management and role diffusion in organisations working with trauma survivors are better suited to account for the occurrence of secondary traumatisation among employees than indirect trauma exposure itself (Pross, 2014; Pross & Schweitzer, 2010). In this perspective, secondary traumatisation is similarly considered a manifestation of work-related stress. However, rather than indirect trauma exposure, it is argued that trauma symptoms among staff are better explained by dysfunctional group and organisational development that fail to develop a clear role-distribution, systematic methods of assessment and intervention as well as establishing a transparent and meaningful organisational hierarchy during organisational growth (Pross, 2014; Pross & Schweitzer, 2010). Evidence for this theoretical perspective is supplied by case analyses where employees in well-structured organisations exhibit less symptoms of secondary traumatisation (Pross, 2014). Based on these considerations, recommendations for care for caregivers include first and foremost to employ staff that have undergone personal therapy in addition to therapeutic training and have a capacity for self-care (Pross, 2011). Qualified staff should be supported by their colleagues as well as adequate resources and possibilities for development, regular supervision and a clearly authorised leader that is able to determine and support the organisations purpose as well as to delegate tasks and responsibilities (Pross, 2011). Finally, the organisational structure and culture should include clear role-definitions delineating individual authority, responsibility and accountability (Pross, 2014), thereby enhancing predictability and feelings of control that are incompatible with psychological traumatisation. Preliminary evidence for the salience of some of these factors for work-related stress

in a Danish context is supplied by longitudinal research on burnout in human service workers where burnout was significantly predicted by low predictability, low role-clarity, low possibilities for development, high meaningfulness, high leadership quality and high role-conflict when controlling for baseline levels of burnout (Borritz et al., 2005). However, the salience of organisational factors for secondary traumatisation as posited by this theoretical perspective have inconsistently been tested in international research. Whether and to what degree the substantiated relationships to burnout extend to symptoms of secondary traumatisation is an important question for advancing research in organisational predictors of secondary traumatisation in general as well as for the development of preventive efforts against burnout and secondary traumatisation in clinical practice.

6.1.1. Aim

The aim of the current chapter is to test the ability of individual, operational and organisational factors supported by existing evidence or suggested by available theories to predict secondary traumatisation and burnout. Specifically, the aim is to identify factors that can be used to distinguish the high-risk groups of secondary traumatisation and burnout from the remaining classes identified in chapter five. These include individual predictors such as age, sex, professional group, training, years of experience, personal history of trauma, personal therapy and secondary trauma self-efficacy. Organisational predictors include role clarity, role conflict, possibilities for development, meaningfulness, leadership quality, predictability, social support from leader and peers and supervision. Finally, operational predictors include exposure ratio, exposure to child abuse, and the presence of suicide or self-harm in cases during the past year.

6.2. Methods

6.2.1. Participants

All participants as described in Chapter 3 were included in the current analysis provided that they had answered at minimum the OLBI and the ProQoL-5. This resulted in a total sample of 667 participants, out of which 64 were Children Centre employees, 542 were municipal employees and 61 were police employees. This sample was identical to the sample used in Chapters 4 and 5.

6.2.2. Measures

Individual predictors (age, sex, professional group (municipality, police or children centre), personal trauma history, personal therapy, experience in current job, training) were assessed using questions designed for this particular survey apart from secondary trauma self-efficacy that was measured using the STSE as described in chapter 3, section 3.2.4. Assessment of personal trauma history included two dichotomous items asking participants to disclose whether they had been exposed to any unspecified and subjectively rated traumatic events in childhood and adulthood, respectively. These items were integrated to a single measure for the current analysis where the presence of either was taken as evidence for a personal history of trauma. Personal therapy and training were assessed using dichotomous items, and experience in current job was assessed by an ordinal variable ranging from 1= ‘less than one year’ to 5 = ‘more than 10 years’.

Table 18: Sample descriptive statistics

	Children Centre	Municipalities	Police	Total sample
N (% of total sample)	64 (9.6%)	542 (81.3%)	61 (9.2%)	667 (100 %)
Age (years; M, SD)	41.62 (8.12)	40.72 (11.59)	45.10 (8.12)	41.20 (11.10)
Gender (N, % women)	60 (93.8 %)	501 (92.6 %)	24 (39.3 %)	585 (87.8 %)
N (%) personal trauma history	34 (53.1 %)	318 (56.5 %)	30 (50.8 %)	382 (53.5 %)
N (%) personal therapy	25 (39.7 %)	151 (27.7 %)	7 (11.5 %)	183 (27.4 %)
Secondary trauma self-efficacy (M, SD. Range:)	39.02 (5.28)	40.45 (4.59)	40.31 (4.71)	40.30 (4.69)
Experience (mode)	‘1 year – less than 3 years’, 29 (46 %)	‘1 year – less than 3 years’, 181 (32.1 %)	’10 years or more’, 36 (60 %)	‘1 year – less than 3 years’, 216 (32 %)
N (%) Training	46 (78 %)	448 (82.4 %)	44 (73.3 %)	537 (80.5 %)
Role-clarity (M, SD, range: 0-4)	2.90 (.58)	2.72 (.70)	2.93 (.53)	2.76 (.68)
Role-conflict (M, SD, range: 0-4)	1.45 (.69)	2.17 (.67)	1.97 (.78)	2.08 (.72)
Social support, colleagues (M, SD, range: 0-4)	3.14 (.72)	3.16 (.67)	2.91 (.58)	3.13 (.67)
Social support, supervisor (M, SD, range: 0-4)	2.76 (.77)	2.58 (.88)	2.56 (.79)	2.60 (.86)
Meaningfulness (M, SD, range: 0-4)	3.35 (.63)	3.10 (.68)	3.07 (.62)	3.12 (.67)
Leadership quality (M, SD, range: 0-4)	2.67 (.72)	2.43 (.90)	2.27 (.84)	2.44 (.88)
Predictability (M, SD, range: 0-4)	2.67 (.70)	2.35 (.76)	2.28 (.62)	2.38 (.74)
N (%) Supervision	57 (91.4 %)	487 (89.4 %)	16 (26.7 %)	588 (88.2 %)
Exposure ratio (M, SD, range: 0-4)	5.92 (1.38)	6.41 (.98)	5.67 (1.83)	6.30 (1.15)

N (%) having worked with physical/sexual abuse in past month	64 (100 %)	211 (38.9 %)	56 (91.8 %)	331 (49.6 %)
N (%) having worked on cases with suicide/self-harm (mode)	'Never', 39 (60.9 %)	'Rarely', 168 (31 %) / 'Sometimes', 169 (31 %)	'Never', 37 (60.7 %)	'Never' 232 (34.8 %)

Organisational factors (role-clarity, role-conflict, social support from peers and supervisor, meaningfulness, possibilities for development, leadership quality, predictability, supervision) were operationalised using the COPSOQ (Kristensen & Borg, 2003) as described in section chapter 3, section 3.2.4 apart from supervision. The assessment of supervision included two dichotomous items asking participants whether they received case-based supervision and whether they received supervision on the personal impact of the work. These items were integrated to a single measure for the current analysis where presence of either was accepted as presence of supervision at the workplace. Table 19 displays sample items for all subscales.

Table 19: Sample items from the COPSOQ-II subscales

Scale	**N=items in scale**	**Sample item**
Quantitative demands	2	Do you have enough time for your work tasks?
Influence	2	Can you influence the amount of work assigned to you?
Meaning	2	Do you feel that the work you do is important?
Role-conflict	4	Do you sometimes have to do things, which seem to be unnecessary?
Role-clarity	3	Do you know exactly what is expected of you at work?
Possibilities for development	2	Do you have the possibility of learning new things through your work?
Predictability	2	Do you receive all the information you need in order to do your work well?
Leadership-quality	2	To what extent would you say that your immediate superior is good at work planning?
Social support, peer	2	How often do you get help and support from your colleagues?
Social support, supervisor	2	How often is your nearest superior willing to listen to your problems at work?

Finally, operational factors (exposure ratio, exposure to child abuse and exposure severity) was assessed using questions specifically designed for the present

survey. Exposure ratio was measured as described in chapter 4. Exposure to child abuse was assessed using a dichotomous item asking participants to disclose whether they had worked with a case of actual or suspected physical or sexual abuse of children in the past month. Exposure severity was assessed on a 5-point Likert scale asking participants to disclose how frequently they have been exposed to suicide and self-harm in their cases during the past year.

6.2.3. Data analysis

The latent classes from chapter 5 was carried over to the present chapter as outcome variables in a two-step analytic procedure. Firstly, the relationship between individual, organizational and operational predictors and class membership were investigated separately in a series of bivariate logistic regressions using the R3STEP auxiliary variable procedure (Asparouhov & Muthén, 2014). This approach is similar to a logistic regression where the relationship between predictors and class-membership is estimated while taking into account the imperfection of classification of individuals as indicated by the entropy-values. Latent class-membership was the dependent variables and predictors were independent variables. Secondly, this was followed by a multivariate logistic regression simultaneously investigating the relationship between all predictors and class membership using the R3STEP procedure for classes on the OLBI. No multivariate logistic regression was computed for classes on the ProQoL-5 due to small sample sizes. All analyses were conducted using robust maximum likelihood in Mplus 8.1.

6.3. Results

Table 20 displays the correlation matrix between correlates.

Table 20: Bivariate correlations between predictors

	Age	Sex	Exp	Pers Tra.	Pers ther	Training	Self-eff.	Mun.	Pol.	Dem.	Inf.	R. Clar	R-Con	Soc col	Soc sup	Meaning	Dev.	LQ	Pred.	Sup.	Exp rat.	Exp CA	Exp Sev.
Age	1																						
Sex	.115**	1																					
Exp	.134**	.477**	1																				
Pers trau.	.064	.115**	.045	1																			
Pers ther	.094*	-.085*	-.056	-.132**	1																		
Training	.081*	-.167**	-.277**	-.017	.097*	1																	
Self-eff.	.053	.168**	.131**	-.006	.026	-.089*	1																
Mun.	-.220**	-.091*	-.051	.041	-.017	-.068	-.066	1															
Pol.	.358**	.111**	.261**	-.040	.113**	.066	.001	-.662**	1														
Dem.	-.148*	-.093*	,.055	.006	-.001	.028	-,250**	.234**	-.154**	1													
Inf.	.182**	.059	.087*	-.069	-.021	.074	.294**	-.177**	.108**	-.476**	1												
R. clar.	.040	.164**	.139**	.027	.029	-.169**	.335**	-.122**	.082*	-.315**	.398**	1											
R. conf	.059	-.188**	.039	.027	-.016	.000	-.281**	.254**	-.048	.442**	-.394**	-.429**	1										
Soc. col.	-.094*	-.202**	-.122**	-.053	.040	.056	.112**	.074	-.104**	-.36	.081*	.195**	-.105**	1									
Soc sup.	-.041	-.052	-.052	-.052	.061	.002	.252**	-.036	-.014	-.235**	.043	.493**	-.319**	.415**	1								

	Age	Sex	Exp	Pers Trau.	Pers ther	Training	Self-eff.	Mun.	Pol.	Dem.	Inf.	R. Clar	R-Conf	Soc col	Soc sup	Meaning	Dev.	LQ	Pred.	Sup.	Exp rat.	Exp CA	Exp Sev.
Meaning	-.027	.174**	.094*	.025	-.017	-.111**	.331**	-.065	-.023	-.240**	.411**	.541**	-.325**	.135**	.292**	1							
Dev	-.108**	-.028	-.067	.008	-.047	-.152**	.260**	.016	-.092*	-.185**	.314**	.451**	-.221**	.253**	.316**	.581**	1						
LQ	-.071	-.040	-.075	-.029	.026	-.048	.242**	-.021	-.061	-.349**	.422**	.513**	-.381**	.278**	.680**	.292**	.369**	1					
Pred	-.065	.026	-.039	.004	.002	-.131**	.264**	-.066	-.043	-.301**	.422**	.635**	-.444**	.210**	.507**	.399**	.397**	.567**	1				
Sup.	-.092*	-.029	-.065	.002	-.059	-.135**	.047	.079*	-.144**	.075	-.018	.123**	-.080*	.104**	.071	.026	.083*	.134**	.153**	1			
Exp ratio	-.073	-.110**	-.033	.079*	-.049	-.118**	-.030	.209**	-.174**	.054	-.109**	-.011	.090*	.071	-.002	.002	-.065	-.008	.024	.069	1		
Exp CA	-.120**	.005	.042	.019	-.013	-.091*	-.021	.443**	-.272**	.074	-.074	-.110**	.097*	.015	-.027	-.067	-.041	-.022	-.138**	.019	.081*	1	
Exp sev.	-.046	-.190**	.030	.065	-.015	-.096*	-.073	.263**	-.196**	.252**	-.202**	-.115**	.242**	-.009	-.142**	-.058	-.005	-.089*	-.076	.082*	.110**	.041	1

Note: Exp: Experience in years. Pers. Tra.: Personal trauma. Pers. Ther.: Personal therapy. Self-eff.: Secondary trauma self-efficacy. Mun.: Municipal employee. Pol.: Police employee. Dem.: Demand. Inf.: Influence. R. clar.: Role clarity. R con.: Role conflict. Soc. Coll: Social support, colleagues. Soc. Sup.: Social support supervisor. Dev.: Possibilities for development. LQ: Leadership quality. Pred.: Predictability. Exp. Rat.: Exposure ratio. Exp. CA: Exposure to child abuse case within the past month. Exp. Sev.: Exposure to suicide or self-harm in cases over the past year.

*Correlation significant at the $p < .05$ level (2-tailed). **Correlation significant at the $p < .01$ level (2-tailed).

6.3.1. Secondary traumatisation

Table 21 displays the results from the bivariate logistic regression of the relationship between class-membership and individual, organizational and operational predictors. The low risk class was used as reference category for the outcome variable.

Table 21: Odds ratios for correlates of class membership (bivariate logistic regression)

	Secondary traumatisation	p	Generic stress	p
Age	1.03 (0.99-1.08)	0.153	**0.96 (0.94-0.98)**	0.000
Sex	1.99 (0.41-9.59)	0.392	0.4 (0.05-3.33)	0.392
Experience	0.75 (0.56-1.02)	0.067	0.89 (0.77-1.02)	0.082
Personal trauma	**2.9 (1.07-7.84)**	0.036	1.51 (0.98-2.34)	0.062
Personal therapy	0.46 (0.19-1.14)	0.094	**0.46 (0.29-0.73)**	0.001
Training	0.46 (0.29-0.73)	0.238	1.3 (0.76-2.21)	0.34
Self-efficacy	**0.7 (0.63-0.78)**	0.000	**0.82 (0.77-0.88)**	0.000
Municipal	0.92 (0.34-2.45)	0.862	**2.77 (1.36-5.67)**	0.005
Police	0.27 (0.04-2.02)	0.201	**< .0001 (0-0)**	0.000
Demand	**1.48 (1.07-2.05)**	0.018	**1.5 (1.3-1.72)**	0.000
Influence	**0.4 (0.24-0.68)**	0.001	**0.56 (0.41-0.77)**	0.000
Role clarity	**0.34 (0.2-0.59)**	0.000	**0.45 (0.3-0.67)**	0.000
Role conflict	1.05 (0.39-2.82)	0.928	0.41 (0.16-1.02)	0.055
Social support colleagues	**0.31 (0.15-0.67)**	0.003	1.18 (0.79-1.74)	0.417
Social support supervisor	**0.24 (0.15-0.39)**	0.000	**0.64 (0.48-0.84)**	0.001
Meaning	0.67 (0.36-1.26)	0.217	**0.67 (0.36-1.26)**	0.000
Development	**0.44 (0.19-0.99)**	0.048	0.69 (0.47-1.03)	0.067
Leadership quality	**0.28 (0.18-0.43)**	0.000	**0.63 (0.48-0.81)**	0.001
Predictability	**0.4 (0.25-0.62)**	0.000	**0.55 (0.4-0.77)**	0.001
Supervision	**0.36 (0.14-0.93)**	0.034	1.87 (0.83-4.23)	0.13
Exposure ratio	1.28 (0.76-2.14)	0.35	**1.4 (1.16-1.68)**	0.000
Child abuse case	0.91 (0.39-2.14)	0.836	1.14 (0.74-1.75)	0.546
Exposure severity (suicide)	**2.18 (1.41-3.39)**	0.000	**1.28 (1.02-1.61)**	0.034

Note: Low risk group was the comparison group for outcomes.

Overall, there was distinct specificity in the relationship between individual factors and group membership with personal trauma being the only individual risk factor for secondary traumatisation, and municipal employment being the only individual risk factor for membership of the generic stress group. Secondary trauma self-efficacy was protective against membership of both groups, whereas police

employment, personal therapy and age were protective against membership of the generic stress group.

Several organisational factors were inversely related to membership of either group. Specifically, role clarity, influence, social support from supervisor, predictability and leadership quality was protective against secondary traumatisation and generic stress alike, whereas possibilities for development, social support from colleagues and supervision were negatively associated only with secondary traumatisation. Similarly, meaningfulness was inversely related to membership of the generic stress group only. Finally, exposure severity and higher demands were associated with increased risk of membership of both groups, whereas exposure ratio solely increased the risk of membership in the generic stress group

6.3.2. Burnout

Table 22 displays the results from the bivariate logistic regression of the relationship between class-membership and individual, organizational and operational predictors. The low risk class was used as reference category for the outcome variable.

Overall, individual factors had little effect on group membership. Men were overrepresented in the elevated disengagement group, and secondary trauma self-efficacy reduced the risk of membership of all groups. There was specificity in the relationship between professional groups with municipal employees being significantly more likely to be represented in the elevated exhaustion, and less likely to be represented in the elevated disengagement group. Police employees on the other hand was more likely to be represented in the elevated disengagement group.

Table 22: Odds ratios for correlates of class membership (bivariate logistic regression)

	Elevated exhaustion	p	Elevated disengagement	p	High burnout	p
Age	0.99 (0.97-1.01)	0.463	0.99 (0.96-1.01)	0.239	**0.95 (0.93-0.97)**	0.000
Sex	1.29 (0.63-2.66)	0.489	**2.43 (1.31-4.5)**	0.005	1.53 (0.78-3.01)	0.221
Experience	0.98 (0.82-1.18)	0.832	1.07 (0.87-1.3)	0.533	0.92 (0.78-1.08)	0.315
Personal trauma	1.06 (0.66-1.7)	0.815	0.82 (0.47-1.46)	0.509	1.17 (0.72-1.93)	0.525
Personal therapy	1.28 (0.75-2.19)	0.362	1.02 (0.52-2.01)	0.956	0.61 (0.36-1.06)	0.078
Training	1.02 (0.52-2.01)	0.733	1.08 (0.51-2.29)	0.848	1.47 (0.8-2.72)	0.217
Self-efficacy	**0.81 (0.75-0.87)**	0.000	**0.81 (0.75-0.89)**	0.000	**0.69 (0.62-0.75)**	0.000
Municipal	**2.34 (1.14-4.82)**	0.02	**0.53 (0.29-1)**	0.049	1.9 (0.95-3.81)	0.071
Police	3.08 (0.88-10.8)	0.079	**2.21 (1.01-4.88)**	0.049	0.82 (0.34-1.96)	0.656
Demand	**1.85 (1.56-2.2)**	0.000	**1.28 (1.08-1.51)**	0.004	**2.45 (2.02-2.98)**	0.000
Influence	**0.42 (0.3-0.59)**	0.000	**0.36 (0.22-0.58)**	0.000	**0.12 (0.07-0.2)**	0.000
Role clarity	**0.23 (0.14-0.38)**	0.000	**0.2 (0.11-0.35)**	0.000	**0.09 (0.05-0.15)**	0.000
Role conflict	**5.14 (2.99-8.83)**	0.000	**3.33 (1.91-5.8)**	0.000	**19.43 (18.33-20.6)**	0.000
Social support colleagues	0.71 (0.5-1.02)	0.067	0.67 (0.44-1.03)	0.066	**0.44 (0.3-0.65)**	0.000
Social support supervisor	0.8 (0.55-1.16)	0.236	**0.34 (0.24-0.5)**	0.000	**2.15 (1.53-3.03)**	0.000
Meaning	**0.4 (0.25-0.65)**	0.000	**0.4 (0.25-0.65)**	0.000	**0.04 (0.02-0.08)**	0.000
Development	**0.51 (0.31-0.85)**	0.009	**0.16 (0.08-0.29)**	0.000	**0.09 (0.05-0.16)**	0.000
Leadership quality	**0.35 (0.24-0.51)**	0.000	**0.35 (0.23-0.54)**	0.000	**0.14 (0.09-0.22)**	0.000
Predictability	**0.39 (0.25-0.6)**	0.000	**0.34 (0.21-0.56)**	0.000	**0.15 (0.09-0.24)**	0.000
Supervision	**4.41 (1.32-14.78)**	0.016	0.88 (0.4-1.93)	0.748	0.73 (0.38-1.41)	0.354
Exposure ratio	1.21 (0.99-1.48)	0.063	1.19 (0.92-1.56)	0.191	1.19 (0.95-1.49)	0.132
Child abuse case	1.08 (0.67-1.73)	0.75	0.68 (0.38-1.21)	0.19	1.17 (0.72-1.92)	0.524
Exposure severity (suicide)	**1.79 (1.34-2.39)**	0.000	1.15 (0.83-1.59)	0.389	**2 (1.49-2.68)**	0.000

Note: Low risk group was the comparison group for outcomes.

Several organisational factors displayed similar relationships to all groups. Role clarity, influence, meaning, predictability, leadership quality and possibilities for development were all inversely related to all groups, whereas role-conflict and higher demands increased the risk of membership of all groups. In contrast, social support from colleagues was only negatively related to the high burnout group, and the likelihood of receiving social support from supervisor were higher for employees in the high burnout group, whereas it was lower for employees in the elevated disengagement group. Similarly, supervision was only positively related to the elevated exhaustion group. Finally, there was little specificity in the relationship between exposure related factors and groups. Exposure severity was associated with elevated exhaustion and burnout, whereas all other exposure factors were unrelated to group membership. Table 23 displays the results from the multivariate logistic regression.

Table 23: Odds ratios for correlates of class membership (multivariate)

	Elevated exhaustion	p	Elevated disengagement	p	High burnout	p
Age	1.02 (0.98-1.06)	0.435	1 (0.95-1.04)	0.937	0.98 (0.92-1.03)	0.363
Sex	3.07 (0.6-15.78)	0.179	4.53 (0.87-23.51)	0.072	4.43 (0.82-24.06)	0.085
Experience	1.07 (0.76-1.49)	0.714	1.22 (0.84-1.77)	0.298	1.19 (0.72-1.96)	0.489
Personal trauma	0.81 (0.37-1.76)	0.594	0.59 (0.25-1.39)	0.226	0.92 (0.34-2.53)	0.874
Personal therapy	0.71 (0.28-1.79)	0.469	0.75 (0.22-2.5)	0.635	0.49 (0.14-1.69)	0.261
Training	1.37 (0.43-4.35)	0.595	0.74 (0.22-2.48)	0.625	1.16 (0.27-5.05)	0.840
Self-efficacy	**0.88 (0.79-0.97)**	0.015	0.92 (0.82-1.04)	0.170	**0.78 (0.69-0.89)**	0.000
Municipal	0.37 (0.07-1.91)	0.237	**0.14 (0.02-0.79)**	0.026	0.23 (0.03-2.04)	0.188
Police	0.32 (0.03-3.59)	0.358	0.23 (0.03-1.49)	0.122	0.28 (0.01-5.56)	0.400
Demand	**1.66 (1.2-2.3)**	0.002	1.22 (0.91-1.63)	0.181	**1.88 (1.35-2.62)**	0.000
Influence	1.15 (0.67-1.97)	0.621	0.72 (0.36-1.42)	0.339	0.86 (0.43-1.73)	0.676
Role clarity	0.47 (0.22-1.04)	0.063	0.44 (0.15-1.31)	0.141	1.09 (0.38-3.09)	0.874
Role conflict	**2.67 (1.27-5.62)**	0.010	1.75 (0.71-4.27)	0.205	**8.08 (2.84-22.98)**	0.000
Social support colleagues	0.72 (0.37-1.41)	0.336	0.98 (0.44-2.18)	0.961	0.7 (0.3-1.64)	0.415
Social support supervisor	0.99 (0.53-1.85)	0.968	0.66 (0.3-1.48)	0.314	0.5 (0.22-1.12)	0.092
Meaning	0.7 (0.3-1.66)	0.420	**0.17 (0.07-0.43)**	0.000	**0.07 (0.02-0.24)**	0.000
Development	1.45 (0.58-3.63)	0.427	0.84 (0.32-2.19)	0.724	0.89 (0.31-2.56)	0.829
Leadership quality	0.56 (0.32-1.01)	0.052	0.83 (0.39-1.78)	0.635	**0.34 (0.14-0.83)**	0.018
Predictability	1.34 (0.6-2.99)	0.479	1.63 (0.71-3.78)	0.252	1.6 (0.58-4.4)	0.365
Supervision	3.86 (0.92-16.18)	0.064	0.84 (0.26-2.68)	0.761	0.95 (0.18-4.94)	0.953
Exposure ratio	1.31 (0.9-1.91)	0.165	1.39 (0.92-2.08)	0.117	1.18 (0.73-1.92)	0.498
Child abuse case	1 (0.42-2.39)	0.995	0.77 (0.28-2.08)	0.604	1.02 (0.37-2.84)	0.967
Exposure severity (suicide)	1.37 (0.92-2.06)	0.127	1.15 (0.75-1.77)	0.516	1.39 (0.74-2.6)	0.308

Note: Low risk of burnout = comparison group for outcomes.

Overall, differences between correlates and classes were minimized in the multivariate logistic regression compared to the bivariate analysis. Secondary traumatisation self-efficacy decreased the likelihood of belonging to the elevated exhaustion and high burnout class, whereas municipal employment and meaning

decreased the likelihood of belonging to the elevated disengagement class. Higher demands and role-conflict increased likelihood of elevated exhaustion and high burnout, and high meaningfulness decreased the likelihood of belonging to the elevated disengagement and high burnout classes. Finally, higher leadership quality decreased the likelihood of being in the high burnout class.

Summarized, results from the current study suggested that some factors were related to both high risk of secondary traumatisation and high risk of burnout. Specifically, high demands and exposure severity were related to increased likelihood of both outcomes, whereas leadership quality, social support from co-workers, role clarity, influence, predictability, possibilities for development and secondary trauma self-efficacy were related to decreased likelihood of both outcomes in bivariate analysis. Additionally, personal trauma history was uniquely associated with increased likelihood of secondary traumatisation, whereas social support from supervisor and role conflict was uniquely associated with increased likelihood of burnout. In multivariate analysis, only role conflict and demand increased the likelihood of burnout, whereas meaning, leadership quality and secondary trauma self-efficacy decreased the likelihood of burnout.

For secondary traumatisation, the strongest covariates were personal history of trauma that increased the likelihood of secondary traumatisation by factor 2.9 [95 % CI: 1.07 – 7.84], and social support from supervisor that decreased the likelihood by factor 0.28 [95 % CI: 0.18 – 0.43]. For burnout, the strongest covariates in bivariate analysis were role conflict that increased the likelihood of burnout by factor 19.43 [95 % CI: 18.33 – 20.6] and meaning that decreased the likelihood of burnout by factor 0.04 [95 % CI: 0.02 – 0.08], closely followed by role clarity and possibilities for development. This result was replicated in in multivariate analysis,

where the strongest covariates was role-conflict that increased the likelihood of burnout with factor 8.08 [95 % CI: 2.84 - 22.98] and meaning that decreased the likelihood of burnout with factor 0.07 [95 % CI: 0.02 – 0.24]. Role clarity and possibilities for development were nonsignificant correlates of burnout in multivariate analysis. Only leadership quality was uniquely related to high risk of burnout in multivariate analysis comparing odds-ratios across classes on the OLBI. For the ProQoL-5, personal trauma history, social support from colleagues, possibilities for development and supervision was uniquely related to secondary traumatisation compared to the generic stress class.

6.4. Discussion

The purpose of the current chapter was to test the relationship between individual, organisational and operational factors and high-risk groups of secondary traumatisation and burnout to further our understanding of organisational factors' relationship to secondary traumatisation, and to determine the most promising targets for preventing secondary traumatisation and burnout among Danish child protection workers. However, in relation to interpreting results in accordance with this aim, particularly two limitations to the current data and analysis must be noted. First and foremost, data is cross-sectional in nature and therefore, no causal inferences can be drawn and any conclusions regarding the relationship between hypothesised predictors and outcomes are tentative and must be investigated in longitudinal studies before any serious claims to predictors' risk- or resilience-enhancing properties can be made. Statistically significant correlates in the present analysis represent promising targets for future research and supplement current best knowledge to direct preventive efforts. Secondly, only few participants (n = 27, 4 %) were at high risk for secondary traumatisation. Simulation studies have suggested

that groups produced by latent class analysis that comprise less than 5 % of the sample are at risk for producing unstable estimates when carried into follow up analysis (Nylund et al., 2007). Therefore, the effect sizes of relationships between predictors and participants at risk of secondary traumatisation should be interpreted with caution and tested in a larger sample. Due to the small sample-size and large number of predictors, only bivariate analysis of single predictors could be computed for secondary traumatisation, meaning that any comparisons of effect sizes across predictors should be performed with caution.

Overall, generic risk factors for both the high risk group of burnout and secondary traumatisation were demands and exposure severity, suggesting that employees exposed to high quantitative demands and suicide or self-harm in the past year are most at risk for secondary traumatisation and burnout. These findings align with the job-demand model of job-strain (Karasek & Theorell, 1990) that has been linked to burnout (Demerouti et al., 2001) in other occupations, as well as with the theoretical proposition for elevated exposure as an antecedent of secondary traumatisation (Figley, 2002; Ludick & Figley, 2016). Consequently, managing case-load quality and quantity as well as enabling employees to influence decisions regarding their work are likely to be fruitful targets for preventive initiatives against work-related adverse mental health outcomes.

Similarly, generic protective factors were leadership quality and secondary trauma self-efficacy, suggesting that employees that are confident in their ability to handle the personal impact of their work with children exposed to trauma and that are led by a supervisor who prioritizes job satisfaction and is able to plan and rank tasks at work are less likely to experience secondary traumatisation and burnout alike. This is consistent with research among military mental health service providers

(Shoji et al., 2015) as well as among survivors of primary exposure trauma where coping self-efficacy significantly reduces the risk of PTSD among survivors of sexual trauma (Mahoney, Lynch & Benight, 2019) as well as survivors of motor vehicle accidents (Benight, Cieslak, Molton & Johnson, 2008). Similarly, low feelings of self-efficacy has previously been found to precede the development of burnout in human service work with children (Schwarzer & Hallum, 2008), suggesting that preventive efforts that support employees' belief in their capability to handle the personal impact of working with child survivors of trauma is likely to be an effective way to strengthen resilience among employees. Social learning theory posits that previous experience, observational leaning, verbal persuasion and encouragement as well as emotional arousal are important determinants of self-efficacy (Bandura, 1997). Hence, concrete measures towards prevention could include targeted efforts to support the development of employee self-efficacy in coping through collegial support and modelling (McCann & Pearlman, 1990), supervision and clearly established procedures for accessing support when deemed necessary (Isdal, 2017). Additionally, it may be beneficial when interviewing potential employees to assess their previous experience with managing indirect trauma exposure as they are likely to be more resilient if they have previously handled this exposure successfully.

Similarly, leadership quality has been linked to work-related psychological distress in international (Tepper, 2000; Stordeur, D'hoore & Vendenberghe, 2001) and previous Danish studies (Borritz et al., 2005). Notably however, while leadership quality was a protective factor against burnout when assessed cross-sectionally, it became a risk-factor for work-related burnout when assessed longitudinally controlling for potential confounders (Borritz et al., 2005). A similar

pattern was reported by Borritz and colleagues (2005) for meaningfulness that appeared to be the strongest protective factor for burnout in the present study. These findings highlight the need for additional longitudinal studies assessing whether leadership quality displays the same relationship to secondary traumatisation over time, as well as cautions against relying solely on prevention strategies targeting supervisors' leadership behaviour or on employing individuals characterised by high dedication to child protection work when preventing burnout and secondary traumatisation. Indeed, recent research has suggested that employee characteristics such as professionalism and training among social educators might enhance coping with an individual incident of minor workplace violence, whereas longitudinally, these characteristics increase the risk of developing work-related PTSD following work-related violence as it enables prolonged exposure (Pihl-Thingvad, 2019). As leadership qualities and meaningfulness have been linked to job satisfaction and intent to stay (Yao & Huan, 2018), even despite high levels of emotional exhaustion among child protection workers (Stalker, Mandell, Frensch, Harvey & Wright, 2007), it might be hypothesised that leadership quality and meaningfulness have a similar function in prolonging exposure to detrimental working conditions and indirect trauma, thereby increasing the risk of burnout.

Notably, however, neither ratio of indirect trauma exposure nor working a case of actual or suspected physical or sexual child abuse during the past month were significantly related to risk of burnout or secondary traumatisation, a finding conflicting with Hensel and colleagues (2015) meta-analysis. Instead, exposure to suicide or self-harm in the past year was predictive of high risk of both outcomes, thereby highlighting the relevance of recent critiques surrounding the qualities of trauma exposure in predicting symptoms of secondary traumatisation (Elwood et al.,

2011). Specifically, scholars have highlighted difficulties related to separating the impact of direct and indirect exposure when assessing consequences of work-related trauma (Elwood et al., 2011; Sprang et al., 2018). This differentiation is pivotal to the definition and model of secondary traumatisation, however, whether the importance of this distinction extends from academic research to employees' everyday work-life is a question yet to be answered. Existing research has documented that child protection workers are at risk for physical assault or threats of violence during the fulfilment of occupational duties (Cornille & Meyers, 1999; Horwitz, 2006). In conjunction with findings from the current study suggesting that the most important operational factor for secondary traumatisation and burnout was suicide or self-injury in cases during the past year that might be also be conceived of as direct rather than indirect exposure to potentially traumatizing events, more research is needed to further support the development of a theoretical framework that can account for the role of indirect trauma exposure for symptoms of secondary traumatisation while taking into account contextual factors such as working conditions during the exposure as well as history of direct and indirect trauma exposure in personal and professional life alike.

Indeed, the current study supported the general importance of working conditions for risk of secondary traumatisation, thereby also supporting recent theoretical propositions that organisational context is of central importance for amplifying (demands) or ameliorating (leadership quality, influence, support, possibilities for development, supervision and role-clarity) the risk of secondary traumatisation in addition to individual history of trauma and feelings of self-efficacy and operational factors (Dagan, Ben-Porat & Itzhaky, 2016; Pross & Schweitzer, 2010; Pross, 2014). The current study found that having a personal

history of trauma in child- or adulthood was the strongest risk factor for secondary traumatisation. Previous research among child protection workers has documented that up to 80 % report a history of personal trauma prior to entering into the field of child protection (Cornille & Meyers, 1999), thereby surpassing the average rate of trauma exposures reported in the World Mental Health surveys (Kessler et al., 2017). While the endorsement rates of personal trauma history in the present study were notably lower (47.2 %), the potent risk enhancing potential of this history is a finding that is consistent with existing research (Hensel et al., 2015), although some studies find that there is no relationship between adverse childhood experiences and secondary traumatisation (Howard et al., 2015). The current study is unable to discern whether this reflects an increased vulnerability to secondary traumatisation relationship that is associated with personal history of trauma, or whether this might be due to confounding the psychological distress of personal and indirect trauma in operationalising secondary traumatisation. Specifically, previous research has documented explicit histories of childhood trauma among child protection workers and human service workers alike and linked this history to increased risk of secondary and vicarious traumatisation (Nelson-Gardell & Harris, 2003; Williams, Helm & Clemens, 2012). Additionally, a prominent symptom of secondary traumatisation when operationalised using the ProQoL-5 is feeling like one is experiencing the client's trauma, and it is unknown to which extent participants endorsing this symptom might have a persona history of trauma that is similar to that of the child. However, evidence has also indicated a cumulative effect of potentially traumatizing events in predicting the likelihood of PTSD (Frost, Vang, Karatzias, Hyland & Shevlin, 2019) and work-related PTSD specifically (Pihl-Thingvad, 2019), supporting the hypothesis of increased vulnerability. Under this circumstance,

while personal therapy was not a statistically significant protective factor against secondary traumatisation in the present study, it is likely that personal therapy would have the potential to mitigate the impact of personal history of trauma on distress related to secondary traumatisation. Future research is required to test the hypothesis of a moderating effect of personal therapy on the relationship between having a personal history of trauma and risk of secondary traumatisation.

Finally, bivariate relationships between organisational predictors and burnout replicated findings from Borritz and colleagues' (2005) longitudinal study on the key role of role clarity, role conflict, meaningfulness, leadership quality, possibilities for development and predictability in predicting the development of burnout. Role conflict was uniquely related to burnout and not secondary traumatisation and was the strongest predictor in bivariate multivariate analysis alike. Role conflict is a commonly reported problem among child protection workers (Harrison, 1980) that are required to balance potentially conflicting role tasks of supporting the emotional recovery of a child following a traumatic incident while simultaneously deciding whether the child should be removed from home or whether parents or significant others in the life of the child should be reported to the police for abuse or neglect, thereby incurring more pain to the child. Concern has been raised regarding the increased potential for role conflict in cross-sectoral and multidisciplinary collaboration on the prevention of child abuse (Cross, Fine, Jones & Walsh, 2012; Darlington, Feeney & Rixon, 2004; Melton & Kimbrough-Melton, 2006), as well as the impact of role-conflict on burnout and intent to leave among child protection workers (Travis, Lizano & Mor Barak, 2015) making the identification and ideally the resolution of role conflict a pivotal concern for preventive efforts.

Summarized, findings from the present study suggest that the complexity in predicting the occurrence of particularly secondary traumatisation is higher than previously theorized (Figley, 2002) and the current study brings empirical evidence to support the proposition that a further integration of psychotraumatological and work- and organisational perspectives are needed to elucidate the risk and relationship of secondary traumatisation and burnout in employees exposed to indirect trauma (Cieslak et al., 2014). While findings from a single study is feeble evidence to support recommendations for prevention of either outcome in Danish child protection workers, integration of these findings with existing theory and evidence supports the likely clinical significance of the factors displaying statistically significant relationships to both outcomes. These include high quantitative demands, emotionally difficult cases with self-harm and suicide as key risk factors for both outcomes, and a personal history of trauma, and role conflict as unique risk factors for secondary traumatisation and burnout, respectively. Similarly, leadership quality and secondary trauma self-efficacy are important protective factors for both outcomes, whereas social support from supervisor, and meaning were the strongest unique protective factors for secondary traumatisation and burnout, respectively. However, longitudinal research using larger samples of employees at risk are needed to determine the strongest predictive factors for work-related adversity among child protection workers as well as to elucidate the interaction effects of individual, organisational and operational predictors, thereby allowing for a determination of the most important targets for intervention.

The findings of the current study have implications for practice and research alike. Observing the dual protective role of leadership quality and secondary trauma self-efficacy as well as the dual risk-enhancing role of high quantitative demands and

exposure severity, these factors should be a primary concern for organisational preventive efforts. However, findings from the current study in conjunction with international findings and theories on work-related distress in trauma-exposed organisations also suggested that any intervention targeting a sole factor with the intent of preventing the outcomes are likely to be unsuccessful due to the complex relationships between work-related distress and these factors as well as the relationship between the factors themselves.

For research, the differential relationship between membership in classes on the ProQoL-5 and individual, organisational and operational factors might contribute to elucidating previous discrepancies across studies on the role of risk- and protective factors for secondary traumatisation. Specifically, equivocal findings regarding the role of single covariates is the rule rather than the exception in existing evidence (Vang, Gleeson, Hansen & Shevlin, 2019), and findings from the current study suggests that the recommended scoring procedures for the ProQoL-5 might partially explain this state of evidence as recommended procedures confound generic stress with secondary traumatisation. This is problematic, as these phenomena are associated with differentiated levels of distress and functional impairment (Chapter 5), and because these groups display unique relationships to individual organizational and operational predictors alike. For example, clinical experience and recommendations posit that receiving supervision might protect against secondary traumatisation (Pross, 2014; Sexton, 1999), whereas a recent meta-analysis of quantitative evidence suggests that the effect of supervision for secondary traumatisation is non-significant (Hensel et al., 2015). Inspecting the direction of the relationship of supervision to group-membership in the current study, the consistent report of a null-effect for supervision on secondary traumatisation is likely to be due

to the reversed relationship between supervision and secondary traumatisation and generic stress cancelling each other out. Additionally, the confounding of generic stress and secondary traumatisation might also contribute to explaining the low R^2 values encountered in multiple regressions across individual studies of predictors of secondary traumatisation when operationalised using the ProQoL framework (around or below 25 %; Baugerud et al., 2018; Bonach & Heckert, 2012; Howard et al., 2015; Kulkarni, 2013; Rossi et al., 2012; Sprang, Clark & Whitt-Woosley, 2007).

6.4.1. Conclusion

The current study supported the importance of individual, organisational and operational factors alike when predicting the occurrence of secondary traumatisation and burnout. Overall, the empirically supported model of predictors of secondary traumatisation is more complex and multifaceted than proposed by original theories (Figley, 2002), supporting more recent theoretical perspectives on the salience of social and organisational factors in addition to exposure factors (Ludick & Figley, 2016; Pross & Schweitzer, 2010; Pross, 2014). Notably, it is unlikely that a strictly individual or operational perspective will yield useful recommendations to guide practice in preventing secondary traumatisation as some of the strongest protective factors against this syndrome were organisational in nature. Similarly, the present study reproduced Danish findings regarding the importance of organisational factors in predicting risk of burnout, suggesting that existing recommendations regarding prevention of burnout among human service workers can be readily applied to a population of child protection workers.

Chapter 7:
Discussion

Abstract

The current chapter concludes the thesis with a discussion of the findings presented in Chapters 4-6 in light of existing evidence and the context of the Danish Children Centres. Implications for practice, theory and future research are discussed, and a total of 14 recommendations for prevention of secondary traumatisation and burnout are developed by synthesising findings from the current thesis with a review of existing recommendations for prevention. Preventive efforts that are differentiated according to risk-status are required to effectively protect employees from developing either syndrome in the context of the Danish Children Centres. Additional longitudinal research is needed to further identify and develop effective strategies to prevent secondary traumatisation and burnout as well as our understanding of the mechanisms accounting for the effect of these strategies.

Contents

7.1. Introduction

The overall aim of the current project was to aid the Danish Children Centres in supporting the occupational wellbeing of their employees, thereby ensuring their ability to continuously provide high quality specialized psychosocial services to child survivors of violence and sexual abuse. To meet this purpose, this study had three objectives. Firstly, to map the extent and severity of work-related distress by assessing the occurrence of secondary traumatisation and burnout among Danish child protection workers. To meet this objective, existing international measures to operationalise burnout and secondary traumatisation was translated for a survey distributed to Danish child protection workers. As neither outcome are recognised clinical diagnoses in Denmark, measures of a range of common mental health disorders, general well-being and functional impairment was implemented in the empirical work to support this objective by allowing for valid identification of at-risk groups that simultaneously displayed clinically relevant levels of distress. Secondly, it aimed to develop a model of risk and protective factors for the development of work-related distress under the concepts of secondary traumatisation and burnout. A comprehensive assessment of individual, organisational and operational factors of importance for these outcomes were selected for the survey based on existing research and preparatory field work in the Danish Children Centres to support this objective. Thirdly, the final objective and the focus of the current Chapter is to provide recommendations for the prevention of work-related distress among employees in the Danish Children Centres. A review of findings from the current study as well as a review of existing recommendations for prevention of work-related distress in trauma-exposed populations will facilitate this final objective.

7.2. Contributions and limitations of the current study

The current study found that approximately one in five of employees in the Danish child protection system are at high risk for work-related distress. While this is a considerable minority, this initial finding is encouraging as it establishes that work-related distress is not inevitable in trauma-exposed occupations. Indeed, the majority of employees are not at risk for any type of distress incurred by their job (Chapter 5). This is encouraging, for if the cause of stress was inevitable (e.g. having to work), then cost of removing its' contribution to stress (e.g. freeing people from working) would be unreasonable (Karasek & Theorell, 1990), particularly when workers are employees in a system designed to protect vulnerable children subjected to abusive acts that are criminalised by the same government that employs the workers. On this basis, the preventive efforts intended by the Danish Children Centres to protect their employees from work-related distress is both timely and relevant based on the 9.4 % % and 7.8 % of their current employees at risk for burnout and secondary traumatisation, respectively. Findings from the current study suggest that no single theory is sufficient to explain the risk of clinically relevant work-related distress and impairment. The job-strain model (Karasek & Theorell, 1990) accounts for the relationship between stress and imbalance in demands and influence, however, it is unable to account for the impact of personal trauma history on the development of work-related distress. Psychotherapist's chronic lack of self-care (Figley, 2002) describes the lack of self-care that may increase the risk of work-related distress, but is insufficiently understood if not seen with reference to an organisational context that may act both as a barrier and a facilitator of adequate coping and self-care. Such a context for understanding coping and self-care is provided by the theory of culture of organisations dealing with trauma that stress the structure and culture necessary to adequately support professionals in these roles

(Pross, 2006; 2011; 2014), highlighting factors that are also consistent with the conservation of resources theory on the development of stress (Hobfoll, 1989; Hobfoll et al., 2018). However, if employees do not possess the necessary personal qualities to work with survivors of trauma, any organisational resources, structure and culture will be insufficient to ensure their well-being (Pross, 2006). Hence, preventive efforts must be distributed across individual, organisational (including the social group and the supervisor), as well as an operational efforts, and addressing only one of these aspects as a preventive strategy will be likely to fail to meet its purpose.

The present study was the first to survey the prevalence of burnout and secondary traumatisation among Danish child protection workers and the first to translate and introduce a measure of secondary traumatisation in a Danish context. It has provided knowledge on shared and specific risk and protective factors for either outcome using advanced statistical methods that is valuable in prioritising existing recommendations for preventing both burnout and secondary traumatisation in the context of the Danish Children Centres. Notwithstanding these relevant contributions however, the current study alone is feeble evidence to form the basis of any recommendations for prevention of work-related distress due to its' nature as a stand-alone study in general and owing to two limitations in particular, an empirical and a methodological.

The empirical limitation refers to the sampling procedures and participation rates of the study that hampers the representativeness and generalisability of the study findings. While all Childrens Centre departments in Denmark participated in the survey with sufficient number of participants to ensure generalisability to the population of employees (90 % participation rate for populations of N = X, Kruuse,

2001), it was not possible to compute individual participation rates for police employees or municipal employees, and no registries of child protection workers were accessible that would allow for an estimation of the overall sample representativeness. Additionally, despite being the most numerously represented participants, data on employees in the municipalities are likely to be biased due to non-randomised selection from a sampling frame of departments rather than individuals, where only 42 % of invited departments consented to participate. The most frequently provided reasons for rejecting participation in the police districts and municipalities was undergoing structural changes, being very busy at the department or having recently conducted a similar survey. Based on results from Chapter 6 on the importance of organisational factors for both burnout and secondary traumatisation, it is likely that findings from the current study are underestimating the occurrence of burnout and secondary traumatisation among municipal employees and police employees due to self-exclusion of departments with expectably higher levels of stress due to working conditions.

The methodological limitation pertains to the study's design as a cross-sectional study that inherently precludes the drawing of any causal inferences regarding risk and protective factors for either outcome that is a desirable if not necessary basis for evidence-based recommendations for prevention. Due to this design, it is effectively impossible to determine whether individuals at risk for secondary traumatisation or burnout in the current study are at risk due to the interplay of organisational or operational stressors and individual vulnerabilities, or whether individuals at risk for these syndromes tend to perceive their organisational context and their core-tasks as more stressful than participants not at risk, whereas the at-risk status itself might be due to factors not assessed in the current study. I

consider the latter to be unlikely due to the extensive procedure employed to select variables for the present study, considering international literature and context-specific factors in conjunction. However, a reciprocal relationship between organisation of work and work-related outcomes has been established for both burnout (Ângelo & Chambel, 2015) and work-engagement (Salanova, Schaufeli, Xanthoupoulou & Bakker, 2010; Schaufeli, Bakker & Van Rhenen, 2009), suggesting that participants at risk for burnout and/or secondary traumatisation might be so due to the presence of perceived stressors, and their at-risk status further exacerbates the salience of perceived stressors, leading to increasing vulnerability against negative mental health outcomes consistent with the concepts of loss and gain spirals proposed by Hobfoll in the Conservation of Resources theory (1989).

The weight of these limitations could be offset through the study's integration with international literature on burnout and secondary traumatisation among child protection workers as well as research on their longitudinal development. However, a systematic literature review revealed that existing studies investigating the risk of secondary traumatisation and burnout jointly among child protection workers are cross-sectional in nature and frequently based on an incomprehensive assessment of known organisational predictors of work-related distress, which hampers the comparability across studies as well as the formation of an integrated body of knowledge on this topic (Vang et al., 2018). Additionally, research on the longitudinal relationship between burnout and secondary traumatisation is scarce, with only study conducted to date, and this study found that burnout increase the risk for secondary traumatisation, whereas secondary traumatisation does not increase the risk for burnout (Shoji et al., 2015). However, there is an imminent need for research further exploring the extent of this finding as

well as mediating and moderating factors of this relationship to further support the development of solid recommendations towards the prevention of both outcomes. Additionally, a narrative review of the international literature on burnout and secondary traumatisation among child protection workers suggest that existing longitudinal research on the relationship between burnout and secondary traumatisation has gone unnoticed in some of the most recent research conducted on the development of secondary traumatisation and its' relationship to burnout among child protection workers (Chung & Choo, 2019; Hopwood et al., 2019), suggesting that there is an additional need for a more systematic integration of recent research on the development of particularly secondary traumatisation to further the development of this field of research (Cieslak et al., 2014; Rauvola et al., 2019). Recent initiatives such as the Secondary Traumatic Stress Consortium (www.STSConsortium.com) represent promising efforts to realise this objective.

7.3. Review of existing recommendations

Notwithstanding the limitations to the current study and existing research on burnout and secondary traumatisation among child protection workers, research and clinical work on secondary traumatisation has been undertaken over the course of the past 25 years, and numerous recommendations have been given in individual research papers based on their findings. Table 24 displays an overview of recommendations for prevention presented by studies included in the systematic review described in Chapter 2. Recommendations for individual strategies include maintaining a healthy work/life balance (Brady, 2016; Salloum et al., 2015), sustaining social relationship outside of work (Brady, 2016; Killian, 2008) as well as to engage in positive coping strategies (Brady, 2016; Sprang et al., 2011). Indeed, providing ongoing training on the impact of working with traumatising material was

proposed as an organisational strategy by several studies (Brady, 2016; Perez et al., 2010; Salloum et al., 2015; Weintraub et al., 2016) as this could support employees' engagement in positive (Brady, 2016; Sprang et al., 2011) or trauma informed (Salloum et al., 2015) coping strategies that has been associated with lower levels of work-related distress. Recommendations for employees in child protection work to engage in certain coping strategies to prevent the development of secondary traumatisation and to support this behaviour change through training initiatives has similarly been proposed in a recent systematic review of predictors of secondary traumatisation among child protection workers. Sage, Brooks and Greenberg's (2017) recommend the provision of psychoeducation to child protection professionals on adopting certain coping strategies based on the strategies relative effectiveness that is measured by their ability to reduce severity of the distress incurred by witnessing children's traumas.

Table 24: Overview of recommendations for prevention of occupational distress in studies reviewed in chapter 2

Study	Occupation	Individual	Operational	Supervisor	Organisational	Other
Baldschun (2017)	CPW	-	-	-	-	-
Baugerud (2018)	CPW	-	-	-	-	-
Brady (2017)	Police, ICAC	Maintain a healthy work-life balance. Sustain a strong social support system outside of work. Engage in positive coping strategies		Engage in regular conversations and check-ins among investigators about their overall well-being	Establish a healthy and supportive work environment. Policies and procedures to ensure self-care flexibility and ongoing prevention trainings. Ensure possibilities for professional development. Encourage/mandate the use of employee assistance programs.	Train family members to recognize symptoms and support investigators.
Fisackerly (2016)	Child-life specialists	-	Debrief after a patient fatality.	-	Rotating schedule between high and low risk units. Develop assistance programs that target the specific needs of employees on each unit. High levels of peer or interprofessional support. Implementing workplace support programs. Provide clinical supervision.	Include training on psychological consequences of working in the field in education.
Killian (2008)	Therapists	Maintain an active social network. Talk to supervisors, consultants, and colleagues about work.	Debriefing. Ongoing supervision		Alter workloads. Change prevention paradigm from individual-oriented efforts to systemic approaches targeting working conditions.	-

McGarry (2013)	Pediatric ward employees	-	-	-	Develop organisational systems to facilitate optimal mental health and coping strategies.	Supporting health professionals as they transition from education to profession.
Perez (2010)	Police, ICAC	-	Minimize employee exposure disturbing images (limit the length of time or number of cases)	-	Train employees in recognizing the signs of distress. Providing support as needed. Make referral to professional help when needed.	Train in coping strategies. Training for families of ICAC.
Perron (2006)	Police, forensic interviewers	-	-	-	Attention to aspects of the organization and organizational climate that may be a source of stress	-
Robins (2009)	Child hospital employees	-	-	Acknowledge STS as a potential occupational hazard, normalise it, and offer support during new employee orientation and periodically during staff meetings.	Support of stress management and work–life balance, such as planned time off and good selfcare, Provide forums for increasing the connection between employees.	-
Salloum (2015)	Social workers	Trauma-informed self-care to reduce risk of burnout. Written plans for work–life balance.	-	-	Balance caseloads. Improve provision of trainings on secondary trauma.	-

		Utilizing organizational resources				
Sprang (2011)	CPW + others	Positive coping approaches.	Special support in severe cases of child abuse.	Supervisors are key organizational players, attending to caseload mix (providing an optimal balance of cases based on severity of exposure) and identifying workers that may be in need of formal STS intervention or job reassignment.	Support/generate positive coping approaches. Effective supervision. Support healthy work-life balance. Trust employees to exercise influence and control. Institutionalized, support networks. Special attention should be paid to vulnerable subgroups due to other stressors that may confound self-care and resiliency.	-
Tehrani (2016)	Police, ICAC	-		-	Screening and surveillance to maintain the well-being of ICAC	Research to identify if there is a period of tenure for this role.
Weintraub (2016)	Neonatologists	Must be able to recognize and reconcile the personal impact that the suffering of other's has on one.	-	-	Provide resources and education to promote awareness of this phenomenon.	-

However, while some evidence supports the effectiveness of educational initiatives on appropriate stress management as well as particular coping strategies, the current level of evidence is insufficient to support psychoeducation approaches on distress, coping and selfcare strategies as a primary strategy for prevention against burn-out and secondary traumatisation alone for a number of reasons. Firstly, evidence reviewed by Sage and colleagues (2017) as well as in Vang and colleagues (2018) are primarily produced from cross-sectional studies that precludes the ascribing of any reduction in symptomatology to the effectiveness of adopting certain coping strategies. Secondly, variability in the use and scoring of outcome-measures preclude a direct comparison of different coping-strategies. However, the two studies using Brief COPE (Carver, 1997) both found a non-significant relationship between coping and burnout; and secondary traumatisation (Killian, 2008; Robins et al., 2009) in Vang and colleagues (2018). Remaining findings from studies in the present review are scattered across different conceptualisations: Positive coping was significantly negatively related to burn-out and secondary traumatisation (Brady, 2016, r=-.38 and -.30 respectively), and this effect remained in regression-analysis for burn-out, but not for secondary traumatisation. In a study of hospital personnel, higher levels of optimism significantly predicted lower levels of burn-out (r=-.37) and higher scores on non-productive coping strategies significantly predicted higher levels of burn-out and secondary traumatisation (r=.45 and .50 respectively, McGarry et al., 2013). Younger participants were significantly more likely to use non-productive coping strategies and significantly less likely to share (McGarry et al., 2013). The evidence cited here as well as in Sage and colleagues (2017) is produced predominantly by studies employing a survey methodology like the present study. An inherent condition of the psychological

survey methodology is the reliance on individual introspective reports as a medium of studying phenomena of interest. When used to study coping, this approach is limited to individual reports on their own coping behaviour that might indeed be studied as individual efforts to handle stress, but in nature is a transactional process co-determined by individual and environment (Lazarus, 1995). Coping strategies are contextually anchored attempts to alter a relationship between person and environment when this relationship is deemed too stressful for the individual (Lazarus & Folkman, 1984). One is more likely to use active/problem-focused coping when one perceives the stressor as changeable and resources as accessible and when one believes oneself able to influence factors of importance (Semmer, McGrath & Beehr, 2005). Conversely, if the stressor is outside the control of the individual or resources for active coping is unavailable, one is more likely to use passive or emotion-focused coping to limit the impact of the stressor. Hence, while the inherent appropriateness of "positive coping" (Brady, 2016) and "dealing with the problem" (McGarry et al., 2013, p. 727) as well as the inherent inappropriateness of "non-productive coping" (McGarry et al., 2013, p. 727) is evident as well as empirically supported, it is effectively impossible to determine whether the use of these strategies is to be understood as trait-like coping tendencies of the individual, or whether the use of certain coping strategies are alternative indicators of the nature or severity of the stressor and/or the presence or lack of available resources in the environment due to the cross-sectional design of the studies and the inherent limitations to assessing transactional processes between individual and environment solely in terms of individuals' behaviour without accounting for the individuals perception of available resources in the environment to cope effectively with the existing challenge. Should the former be true, e.g. that coping behaviour reflect trait-

like tendencies, then approaches including training in signs of distress related to working with survivors of child abuse and psychoeducation on effective coping strategies might well be effective. However, this approach assumes that frontline employees are not already aware that denial coping is bad and receiving social support is good, it fails to account for the fact that often, multiple coping strategies are used to handle the same stressor over time (Lazarus, 1995), and it assumes a hyperrational stance to behaviour change that is inconsistent with the oftentimes irrational nature of our behaviour in response to strong and overwhelming emotion (Hochschild, 2012; Zajonc, 1984; 1990), thereby also failing to reflect the complexities of coping in child protection work under the organisational circumstances in which it takes place. Additionally, existing research on the use and helpfulness of self-care strategies has reported a disconnect between the belief in the helpfulness of a self-care strategy and time spent on that strategy, as well as no relationship between time spent on self-care strategies and reduction of secondary traumatic stress symptoms (Bober & Regehr, 2006). These and similar findings have led other scholars to concludes that "*(…) We should probably stop expecting helping professionals to pull themselves up by their bootstraps by reducing stress with standard individual coping strategies of leisure and continuous education, which is clearly not all that effective.*", proposing a theoretical shift to looking at professional stress and coping in a structural, political and organizational context in addition to an individual (p. 42, ll. 3-8, Killian, 2008). Additionally, findings from the current study suggested that secondary trauma self-efficacy may be protective against both secondary traumatisation and burnout. Self-efficacy refers to one's capability to plan and perform necessary actions to attain a desired outcome and is an essential component in determining how people feel, think, and behave (Bandura, 1997), and

can be modulated through performance experience, observational learning and verbal persuasion. Hence, based on available evidence, coping with the impact of working with survivors of child abuse might be better thought of not as a process of learning and deploying concrete strategies, but rather, accumulating experiences of successfully handling difficult emotional experiences inherent to working with survivors of abuse as an integrated part of developing a professional identity as a child protection worker. This might explain why younger employees tend to use non-productive coping strategies (McGarry et al., 2013) as they are still learning effective ways of coping in their professional role, and it might contribute to explaining the finding that differentiated strategies are needed to prevent burnout and intent to leave in child protection workers with different tenure (Boyas, Wind & Ruiz, 2013). Specifically, Boyas and colleagues (2013) found that child protection workers employed for less than three years benefitted from increased supervisory support and influence in their work, whereas organisational fairness was more important for employees with three years or more tenure in preventing burnout and intent to leave (Boyas, Wind & Ruiz, 2013). Indeed, Geoffrion and colleagues (2015) have suggested the notion of professional identity a moderator of the impact of trauma exposure on child welfare professionals. Professional identity is here conceived of as a system of meaning associated with job-roles that guides thoughts, actions and interactions at work and is moderated by professional socialization, past experiences, organizational influence and occupational culture (Geoffrion et al., 2015).

This approach is somewhat reflected in recommendations presented by studies included in the systematic review as some suggestions does indeed revolve around the organisational structure and climate of child protection organisations. Overall, the need for creating a healthy and supportive work environment that

facilitate “optimal mental health and coping strategies” (McGarry et al., 2013, p.) including, flexibility for self-care (Brady, 2016; Fisackerly et al., 2016; Sprang et al., 2011) was the most frequently provided recommendation regarding the organisation of child protection work to prevent work-related distress. Specific recommendations include providing in house or external employee support (Brady, 2016; Fisackerly et al., 2016; Robins et al., 2009; Perez et al., 2010; Sprang et al., 2011), clinical supervision (Fisackerly et al., 2016; Sprang et al., 2011), balancing caseload and content (Fisackerly et al., 2016; Killian, 2008; Salloum et al., 2015; Sprang et al., 2011) as well as providing debriefing and additional support during and after severe cases of child abuse (Fisackerly et al., 2016; Killian, 2008; Sprang et al., 2011) and minimizing exposure when possible (Perez et al., 2010). These recommendations are also consistent with existing guidelines for handling work stress in trauma-exposed organisations presented by Pross (2006; 2011; 2014) and Schweitzer (2010) as well as Chadwick (2016).

In recognising that some sources of stress are inherent to the work with survivors of trauma, Pross (2006; 2011; 2014) and Pross and Schweitzer (2010) suggest fundamental standards of organisation and employment to prevent whatever work-related stress need not be induced and to process the stress that is an inherent to the job. Additionally, Chadwick (2016) have provided extensive guidelines for the recruitment, introduction and retainment of child protection workers in trauma-exposed positions. Specifically, certain demands are made on the individual to cope with the stressors inherent in the job. Therefore, employees should be carefully selected on basis of their competences as well as their personalities (Pross, 2011; 2014), initiated by an accurate description of the skills and experiences needed for

the job as well as the duties associated with it in call for applicants (Chadwick, 2016).

To work effectively with trauma survivors, Pross (2006) suggests that therapeutic self-awareness obtained in the course of therapeutic training is the most important preventive strategy against burning out or becoming secondarily traumatised, a recommendation reiterated by Weintraub (2016). Any personal traumatic experiences should be worked through in a therapeutic setting to minimize the risk of retraumatisation of the professional and of the professional transferring his/her own personal trauma history to colleagues or clients, a recommendation that is supported by the findings of the current study as well as available evidence suggesting that having a personal trauma history increases the risk of secondary traumatisation (Hensel et al., 2015; Vang et al., 2018). This requirement should be supported by communicating a culture of affirmation in sharing with the applicants what means of training, supervision and employee assistance are in place at the organisation to support the ongoing coping efforts required by employees and in supporting their development of a constructive professional identity (Chadwick, 2016). This should also be supported by regular self-examination in relation to casework must be carried out in a safe space through the aid of colleagues and external supervisors to protect employees from over- or under-identification, and from enmeshment and denial (Pross, 2006).

Due to the dual role for employees of conducting the core-task of supporting trauma survivors and supporting colleagues, it is most important that new employees match the team and that they have an ability for teamwork. Employees should be warm-hearted, sensitive and empathetic as well as solid and balanced, and should cultivate a life and identity outside of work, find effective strategies for self-care that

they enjoy and practice listening to themselves and their own needs (Pross & Schweitzer, 2010). Additionally, employees should seek to avoid overwork and taking work home and share work-related problems with colleagues and supervisors as they occur to facilitate learning and minimize risk of work-related stress (Pross, 2006). Sharing of distress should follow principles of low impact debriefing that includes self-awareness of elements that cause distress, giving a fair warning to colleagues and getting consent to share the experience (Chadwick, 2016; Mathieu, 2013). New employees should receive a thorough introduction that allows them to become familiar with the procedures in the organisation, the core task as well as the methods of working with supporting their clients and the procedures for seeking out and receiving support themselves (Chadwick, 2016). Generally, well-structured organisations can minimize much stress that is found in human service work with trauma survivors (Pross, 2011). Structurally, organisations should have known statutes and internal rules of procedure and job descriptions as well as transparent lines of decision-making to ensure a uniform framework for role-taking and decision making as well as predictability (Pross, 2014).

The organisation should be led by a clearly authorised leader that is sustained by management training and leadership coaching for leaders. Management position may be advantageously split in a director of therapeutic services and an administrative director of finance and organisational issues (Pross, 2006). Personal characteristics of leaders are similarly important, and leaders of trauma centres should have a talent for listening, be modest and level-headed, mature, stable, and assertive as well as wise (Pross, 2006). They must be able to lead transparently and be accountable to their decisions, and they must be able to endure being a projection screen for negative and destructive energy that must be contained in trauma work

without renouncing their role in the hierarchy as well as “bad boss” projections and carry through unpopular decisions (Pross, 2011). Transparent, well-maintained procedures and clear role-distributions of management and staff will have a strong positive effect overall and serve in reducing work-related stress markedly (Pross 2014; Pross & Schweitzer, 2010), as will monitoring of caseloads (Chadwick, 2016). For employees, organisations should ensure the availability of ongoing training and education to avoid the development of apathy and disinterest among staff. Cases should be managed in teams which will simultaneously serve to make work more satisfying for employees as well as supporting quality of the work. Organisational procedures should be in place that allows for regular monitoring of employee wellbeing, for example through education on signs and symptoms of secondary traumatisation as well as monitoring of trauma-caseload (Chadwick, 2016).

Finally, case-management should be supported by regular case-conferences for discussing new referrals and procedures to ensure minimal exposure to distressing material (Perez et al., 2010). There should be agreed upon standards for record keeping and philosophy of treatment as well as a standardised battery of assessment tools to support in making professional decisions regarding the needs of the clients. Overall, aims for treatment success and goals for the organisation in general should be realistic and pragmatic. Pross (2014) recommends that organisations ensure the possibility for diversity in caseload and work-related tasks, so employees are not solely working with complex cases of trauma survivors. In these cases, extra support should be available (Fisackerly et al., 2016; Killian, 2008; Sprang et al., 2011). Flexibility and creativity in case-work should be encouraged, as should taking ‘mental health days’ and sabbaticals for research, teaching or dissemination (Chadwick, 2016). This also leaves room for necessary reflection on

working with trauma survivors. Similarly, reducing work hours with trauma survivors through part-time employment or by rotating to other departments or organisational roles should be an option (Pross, 2006).

7.4. Implications for practice in Denmark

Observing the limitations of the current study and the limitations to counterbalancing these, this study in conjunction with the review of existing recommendations represent the best available evidence for developing recommendations for prevetion of burnout and secondary traumatisation in the context of the Danish Children Centres. Recommendations for preventive initiatives presented in this Chapter represent potentially effective strategies that should be implemented with the limitations in mind. Considering the state of the literature and the limitations of the current study, an initial recommendation for preventing the development of work-related distress among child protection workers is for organisations that share this objective to oblige themselves to longitudinal research on the development of secondary traumatisation and burnout in their organisational contexts to support the development of knowledge on the impact of individual risk and protective factors over time that might aid in identifying any preventive initiatives that might be effective in preventing both outcomes.

The results presented in this thesis suggest that work-related distress is best conceived of as two related constructs of burnout and secondary traumatisation rather than a unitary construct of compassion fatigue or undifferentiated stress (Vang et al., 2020) as has been suggested by other scholars (Heritage et al., 2018; Schmidt, 2019). Specifically, findings supported the at least partial separation of burnout and secondary traumatisation both in terms of latent structure (Chapter 4, Vang et al., 2020), participants deemed at risk for either syndrome (Chapter 5) as well as in

terms of risk and resilience factors (Chapter 6). This means that the Danish Children Centres should attend to the development of both syndromes among their employees and that preventive efforts targeting both outcomes are needed. Findings from the current study also suggested that burnout is a more urgent concern among Danish child protection workers than secondary traumatisation, as considerably more employees were at risk for burnout than secondary traumatisation (18.3% compared to 4.0%), and considering that the associated levels of functional impairment and distress as indicated per common mental health disorder symptomatology and general well-being were of a comparable magnitude across the syndromes (Chapter 5). Hence, it is recommended that organisations in the Danish child protection system in general first and foremost attend to existing recommendations regarding the organisational structural and cultural requirements for well-functioning organisations working with survivors of trauma (Pross, 2006; Pross, 2011; 2014; Pross & Schweitzer, 2010; Chadwick, 2010).

Findings from Chapter 6, however, suggested that there was an aspect of generality in both risk and resilience profiles in so far as some factors were important both for preventing or exacerbating the risk of both secondary traumatisation and burnout, as well as an aspect of specificity as some factors protected only against one syndrome and vice versa. Overall, these findings implicate the need for a multifaceted and differentiated approach to comprehensively address the risk of developing work-related stress disorders over the course of a career in child protection work. The approach must be multifaceted as there were both individual, social, leadership-related and organisational factors that increased and decreased the risk of both outcomes, meaning that effective prevention must include all levels of the organisation. Additionally, the approach must be differentiated as some factors

appeared to be uniformly protective, whereas others displayed varying degrees of specificity in increasing or decreasing the risk for either outcome. Gordon (1983) introduced an operational classification of strategies for disease prevention from a cost/benefit-perspective that can be separated into three overall types of strategies: Universal, selective and indicated strategies. This taxonomy is helpful in providing recommendations for differentiated prevention-strategies against work-related distress in the context of the Danish Children Centres as well.

Universal strategies are beneficial to everyone and present with minimal disadvantages (Gordon, 1983) and therefore, these strategies target all members of a population. Examples of universal strategies included measures that can be applied with little guidance and for which the benefits outweigh the costs, such as dental hygiene and using seatbelts in cars. Borg, Nexø, Kolte & Andersen (2010) further specified the nature of universal strategies in the context of preventing mental health problems at work, citing information campaigns about stress and training in stress coping skills as examples of universal strategies. Overall, the aim of universal strategies is to manipulate risk factors that are assumed to cause the development of mental health problems at work for an entire population of workers.

Selective strategies for prevention include strategies for which the costs do not necessarily outweigh the benefits for the general population, only for a subset of the population, such as influenza immunisation for the elderly (Gordon, 1983). In a work- and organisational context, selective strategies target a subgroup of the population who are particularly exposed to known risk-factors of developing mental health problems at work with the aim of providing enhanced or increased support for these individuals.

Finally, indicated strategies target individual members of the population that based on their exhibition of symptoms or characteristics that identifies them individually as at-risk for developing mental health problems (Borg et al., 2010). According to Gordon's initial categorisation (1983), indicated strategies include preventive measures for which the costs do not outweigh the benefits in terms of being uniformly benign or minimal in economic costs. Indicated strategies in the context of preventing work-related distress in child protection workers would target employees for whom a combination of their individual characteristics and work-related demands would make them particularly vulnerable to developing either burnout or secondary traumatisation.

7.2.1. Universal strategies for preventing work-related distress in the Danish Children Centres.

Findings from Chapter 6 indicated an overall resilience profile characterised by role-clarity, influence at work, possibilities for professional development, predictability at work and leadership quality that decreased the risk of both secondary traumatisation and burnout. Similarly, findings from Chapter 6 indicated that the experience of high quantitative demands at work was associated with increased risk of both secondary traumatisation and burnout. This is consistent with existing recommendations for continuous monitoring and balancing of caseloads (Chadwick, 2016; Perez et al., 2010) which would also serve to minimise an additional risk of work-related stress, namely employees feeling pressured to take home work, thereby eroding resilience by preventing employees from cultivating a life outside of work (Brady, 2016; Killian, 2008; Pross, 2011). Mounting caseloads can be an initiating factor of loss spirals (Hobfoll, 1989) whereby high work demands over an extended period of time deprive employees of coping resources

(Shoji et al., 2015), as well as risk forming the basis of a toxic professional identity through an organisational culture of overworking employees (Geoffrion et al., 2015).

In terms of conservation of resources theory, influence on distribution of work and ways of meeting demands at work, possibilities for development through professional training and supervision as well as leadership quality are all factors that can be considered resources to employees in child protection work that are required to meet quantitative demands at work that is represented by high caseload numbers, short deadlines of four months as well as high case-complexity in the Danish Children Centres. Clarity regarding one's role in working with survivors of abuse as well as one's role in the organisation at large may serve to reduce the potential threat to resources associated with high quantitative demands as it allows for realistic estimation of type and amount of resources need to be invested before demands are resolved. Clear and realistic goals for professional efforts in casework allow employees a benchmark against which to evaluate their efforts and when they can be satisfied with a job well done, preventing prolonged work-related distress (Figley, 1995). Similarly, predictability in terms of information needed to solve or address tasks at work being available to the employees as well as being informed about important decisions, changes and future plans well in time serves to reduce the strain associated with the organisation of work with survivors of trauma as well as signalling to the employees that they are important and respected. Conversely, lack of predictability is a key feature of potentially traumatic stressors in addition to uncontrollability, perilousness and to some extent unpreventability (Benight & Bandura, 2004). Maximising predictability and role-clarity for employees in trauma-exposed occupations are of key importance for continued occupational wellbeing. However, this procedure should be undertaken in a way that communicates respect

for employees' capabilities for exercising influence and autonomy as research has shown that too much role-clarity provided by supervisors can be detrimental to employees perception of leadership quality, thereby leading to increased intent to leave (Zheng et al., 2014) as well as eroding perceptions of leadership quality that was another protective factor against work-related stress in the present study.

Overall, findings from the present study (Chapter 4-6) are consistent with the recommendations provided in existing literature regarding organisational structure that encourages clear role-distributions between employees and management, clearly authorised leadership as well as clear procedures for casework and decision making, and continuous training and development programmes for employees. A clear organisational structure and culture that supports the development of a competent professional identity both in terms of being able to fulfil the primary task of assessing and supporting trauma exposed children and the cross-sectoral collaboration as well as the secondary task of handling the emotionally disturbing impact of the primary task is likely to be most protective against developing lasting work-related distress. Consequently, recommendations regarding organisational structure and culture as cited above can be readily transferred to the context of the Danish Children Centres at large and is likely to be beneficial to all employees (Pross, 2006; 2011; 2014; Pross & Schweitzer, 2010).

7.2.2. Selective strategies for preventing work-related distress in the Danish Children Centres

Findings from Chapter 6 also identified specific work-related risk factors that were associated with increased risk of developing work-related distress. These include role-conflict that was related to an increased risk of burnout, as well exposure to cases with suicide or self-harm within the past year that was related to an increased risk of burnout and secondary traumatisation. Following the identification

of these specific factors at work that increase the risk of developing work-related distress, a primary course of action would be to eliminate or limit the exposure to these risk factors. Alternatively, if this line of action is impossible, one should aim to increase the amount of relevant support provided to employees who must endure exposure to these risk-factors. In case of the current study, specific risk-factors were identified for both burnout and secondary traumatisation.

Exposure to suicide and self-harm in cases within the past year increased the risk of both secondary traumatisation and burnout, suggesting that the surfacing of this type of information at any stage in casework should be flagged as an event prompting selective prevention strategies. Specifically, the Danish Children Centres are recommended to accommodating the special impact of this type of cases by orchestrating additional support for employees working these types of cases and ensure that few employees are not overburdened with these types of cases, and encouraging their employees in speaking out about encountering this type of case content. Focused support should be initiated, for example provided by a thorough discussion of the content and course of the case to allow the supervisor to provide instrumental support in analysing the primary features of the case as well as the course of action, as well as emotional support of clinicians' decision making. Alternatively, in cases where the supervisor is not experienced in casework, this function could be contained in regular case-councils that over time could support the build up and retention of expertise in handling high impact cases such as these across the team of professionals. It is recommended that professionals experienced in handling these high severity or very complex cases are not overburdened or solely assigned these types of cases to avoid exacerbating their risk of burnout out or becoming secondarily traumatised. Allowing experienced employees time to

supervise colleagues in handling these cases or providing input on case-councils might be a way of allowing for variation in work-related tasks for these employees as well as further education others.

For burnout, exposure to role-conflict was a unique risk factor and the strongest risk factor altogether in multiple regression analysis with an increase in odds ratio of more than 19 of belonging to the high-risk group of burnout as perception of role-conflict increased. Specifically, four different types of role-conflict comprised the overall index used to indicate its' presence in the current study. These are summarised in table 25.

Table 25: Types of role-conflict and their association with the risk of being categorised at high risk for burnout

Role-Conflict Type	**All (r)**	**Children Centre**	**Municipalities**	**Police**
Experiencing conflicting demands	.278**	.288**	.270**	.272**
Having to do things accepted by some, but not others at work	.176**	.171	.145**	.341**
Having to do things that ought to have been done differently,	.340**	.286*	.330**	.393**
Having to do things that seem unnecessary	.363**	.385**	.355**	.354**

Note: r = Pearson's r. ** $p < 0.01$, * $p < 0.05$.

Overall, all types of role conflict were significantly related to the risk of endorsing burnout, although the salience of individual types of role-conflict differed across professional groups. Specifically, having to do things that were accepted by some but not others were not significantly related to risk of burning out among Children Centre employees as the only group. While this might be partially ascribed to the sample size, this could also be indicative of a relative uniformity or agreement upon the core tasks and how these tasks are addressed in the Children Centres. An

important preventive strategy against burnout is to identify and minimise various types of role-conflict experienced among employees in the Danish Children Centres, and based on correlates above, these might be more likely to be related to having to do things that seem unnecessary, that ought to have been done differently or experiencing conflicting demands. Concern has been raised in the international literature regarding the increased risk for role conflict in cross-sectoral and multidisciplinary collaboration on the prevention of child abuse, referring to the potential diffusion of roles of social workers and police investigators in child advocacy centers (Cross, Fine, Jones & Walsh, 2012). Additionally, the introduction of new public management in Nordic child protection systems and their associated requirements for extensive documentation that is not readily related to the core task (Tham, 2018) may be a relevant factor for understanding perceived role-conflicts among Children Centre employees as well. Future in-depth studies are required that explore the nature of role-conflicts associated with roles of employees in the Danish Children Centres, however, an initial recommendation for the Danish Children Centres would be to discuss this topic with their employees to identify and explore the existence of role-conflicts related to different functions that may be modified, thereby reducing the risk of burnout.

While not directly surveyed, information gathered during the preparatory phase of liaising with employees in the Danish Children Centres suggested that observing forensic interviews of children's testimonies as part of preparing for crisis support and assessment of the children was considered particularly stressful by the employees. The reasons provided for the distress associated with this task suggests that this may be associated with employees being exposed to highly distressing material in a position that involves a high degree of role-conflict for them in the

shape of conflicting demands on their role. Specifically, the overall purpose of the Danish Children Centres is to ensure that the systems' procedures that are activated following suspicion of child abuse are carried out in ways that are as gentle to the child as possible. Consequently, gentleness and minimising the distress of the child is the guiding philosophy of work in the Danish Children Centers. The forensic interview process is often distressing to the child as they are forced to confront traumatic material that they usually make careful efforts to avoid without prior notice and without extensive psychosocial support. This demand and the circumstances under which they are exposed to it may make children dissociate, fidget with toys and materials in the room, climb the walls or squirm in their seats, or frantically try to initiate conversation about other topics or refrain from providing information.

Similarly, it is not uncommon for particularly pre-school children to be unable to provide information about the abuse they have suffered in a way that is consistent with the requirements of the judicial system for a self-generated narrative of the abuse including details of the abuse such as when, who, how, where and how many times (Ernberg, Tidefors & Lnadström, 2016; Ernberg, Magnussen, Landström, & Tidefors, 2018). The video interviews are monitored live in an adjacent room that mimics a court room where attorneys and prosecutors are present in addition to the municipal social worker responsible for the case and the forensic interviewer. Children Centre employees can be present to observe but generally, have no mandate to intervene or participate in ongoing discussion regarding what questions the child is to be asked and how to support the child. However, it is not uncommon that the child's testimony is the strongest piece of evidence in cases of suspected child abuse and it is therefore neither uncommon for the decision of whether to prosecute or withdraw accusations to be made based on the content of the

forensic interview. Due to the decisive role of the forensic interview, defence attorneys observing the legal interests of the accused sometimes begin their legal proceedings in the monitoring room, which includes making derogatory remarks regarding the child's frantic or disorganised behaviour with the aim of making the prosecutors dismiss the case based on incredulous testimony or insufficient evidence before it goes to court. Hence, during the observation of the forensic interviews, Children Centre employees are exposed to legal wrangling over the judicial interpretation of the child's behaviour and testimony that disregard the distress suffered by the child during a procedure that sometimes proves to be unhelpful for the child's legal case, thereby in worst case scenario only causing more distress to a suffering child under conditions where the Children Center employees have no influence on the situation unfolding and are prevented from exercising their professional capacity in supporting the child and minimizing distress incurred by the procedures required by the system as is their core task. Additionally, the forensic interviews are often conducted in the beginning of a case where the employees have had little time to prepare for the content of the interview and as instances or types of abuse not previously known might surface during the interview, these aspects of unpredictability might serve to exacerbate distress. As the observation of forensic interviews is a necessary task for Children Centre employees to minimise the number of times that a child must recount distressing details of abuse, efforts should be made to support Children Centre employees in coping with the distress incurred by forensic interviews. This includes clarity regarding their role and mandate in the monitoring room, and minimization or variation in exposure to forensic interviews, ideally where no employees are required to sit through multiple interviews in the course of one day.

Finally, findings from Chapter 6 also suggested that receiving supervision was protective against secondary traumatisation, and therefore, recommendations regarding the provision of opportunities for continuous supervision to employees that are indirectly trauma exposed is extended to the Danish Children Centres as well (Pross, 2006; 2011).

In summary, in cases where there is suicide or self-harm and at times where employees are experiencing a role-conflict, employees should be encouraged to speak up about this to colleagues or a supervisor, and there should be either a pre-existing plan of action or one should be tailored to the particular situation for further supporting the employee. This might include the provision of additional clinical supervision or closer support by supervisor or an experienced colleague. Additionally, in situations where employees are faced with a role-conflict such as in the example in the monitoring room, further efforts should be made to resolve or minimize the extent of the conflict, for example through a clearer distribution of roles within the monitoring room and a reduction of number of forensic interviews that are monitored by an individual employee.

7.2.3. Indicated strategies for preventing work-related distress in the Danish Children Centres

Finally, findings from Chapter 6 suggested that having a personal history of trauma was the strongest risk factor for secondary traumatisation among Danish child protection workers. This finding is consistent with existing evidence among therapists providing services to traumatised individuals (Hensel et al., 2015). Based on these findings, recommendations regarding the therapeutic training and self-awareness of trauma-professionals (Pross, 2006; 2011; 2014; Weintraub, 2016) is extended to the Danish Children Centers as an indicated strategy for employees that have a personal history of trauma or become primarily trauma exposed during their

employment. Additionally, providing therapeutic training to Children Centre employees as an opportunity for professional development will likely further their abilities to successfully handle both their core task of assessing and supporting children exposed to violence and the secondary tasks of handling the emotional impact. Employees who are experiencing that any personal trauma are affecting their work with the children may benefit from additional clinical supervision and under persistent distress may consider seeking out personal therapy, although the present study found no direct relationship between personal therapy and secondary traumatisation.

While working with child abuse cases itself and the ratio of exposure to vulnerable children itself was not directly related to either outcome, other studies have found that aspects of individual cases that affect the employees cannot always be predicted or prepared for (Dyregrov & Mitchell, 1992), and that the impact might not solely be related to one's personal history of trauma but important relationships in the professionals personal life or simply to the gruesomeness of the details in the particular case (McCann & Pearlman, 1990). Additionally, information obtained from interviews during the preparatory fieldwork also suggested that employees in the Danish Children Centres had encountered cases in their professional life many years ago that stuck with them due to details that were not specifically related to the traumatic content of the child's life story, but rather the lack of support and care available to the child in general. These findings are consistent with reports from an in-depth study on self-reported difficult situations encountered in therapy by Smith and colleagues (2007). Specifically, they identified three types of difficult situations: traumatic content, clients' existential problems and interactional challenges with clients. Although traumatic situations did have a tendency evoke specific feelings of

shock, anxiety and feelings of being overwhelmed, destabilised and needing to talk, trauma therapists did not report statistically significantly more difficult situations related to traumatic content than non-trauma therapists (Smith, Kleijn, & Hutschemaekers, 2007). The findings from the current study that suicide or self-harm were predictive of employee distress is interesting as it becomes open to multiple interpretations in light of this evidence. A link has been established between suicide and self-harm and PTSD and childhood trauma (Fliegem Lee, Grimm & Klapp, 2009; Harned, Najavits & Weiss, 2006), and as such, this relationship may be interpreted as a proxy for exposure to traumatic situations and therefore reflecting a development of secondary traumatisation after indirect trauma exposure. Alternatively, suicide attempts and self-harm are types of behaviour that may be experienced as very appealing towards the professionals and in turn may elicit feelings of helplessness and more emotional investment on the hands of the therapists in this crisis situation, corresponding to the interactionally difficult situations in the taxonomy of Smith and colleagues (2007). Finally, people who are committing suicide may also be in existentially harrowing situations, seeing no other way out, and therefore, these cases might be more likely to be posing existential challenges to the therapists as well, corresponding to the final category in the Smith and colleagues' (2007) taxonomy. The extent to which interactional difficulties and existentially difficult situations can cause secondary traumatisation or emotionally distressing states of equal importance among professionals is a topic for further research.

Similarly, in an in-depth study of differences in symptoms experienced and reported among trauma therapists and non-trauma therapists, van Minnen & Keijsers (2000) found that trauma therapists subjectively reported more symptoms and

cognitive disruptions that may reflect vicarious traumatisation, however, there was no statistically significant differences on measures of vicarious traumatisation and general distress. Specifically, reaction such as dissociation and numbness were reported to client material by both trauma therapists and non-trauma therapists, indicating that therapist reactions are also driven by situational bound factors rather than content related factors alone. Van Minnen & Keijser (2000) interpreted their findings as indicating that trauma therapists might be experiencing more disruptions, but they are able to accommodate or assimilate the narratives encountered to their cognitive schemes through effective training and strategies such as talking to colleagues and balancing their caseload quantity and quality.

Consequently, it should also be recognised that while there was no statistically significant relationship in the present study between exposure to cases of abuse in the past month and either outcome, employees might be affected by their case-work for other reason than their apparent traumatic nature, and that this impact cannot always be predicted or prepared for (Dyregrov & Mitchell, 1992; Smith et al., 2007; van Minnen & Keijsers, 2000). Consequently, it is recommended that the Children Centres evaluate the opportunities for employees to process the impact that might be experienced due to different aspects of their cases at work and what barriers that might prevent employees from doing so. Based on the preparatory field work, there is a great resource present in the team-work constellations where employees are always working with a partner in all cases, thereby readily providing an opportunity to talk through emotionally disturbing material with a colleagues who is familiar with the case and able to support both professional decision making and emotional processing of the facts of the case. Strategies for actively processing this material with a colleague or collectively might be low impact debriefing (Mathieu, 2013) or

the camp-fire method (Isdal, 2017), respectively. Conversely, barriers feelings of shame towards one's own reactions as these may be considered unprofessional (van Minnen & Keijsers, 2000), or may be high demands at work that reduce time available for informal talking to colleagues about active cases, thereby leading to a build-up of unprocessed distress.

7.2.4. Summary of recommendations

Overall, evidence from the current study suggests that a multilevel and differentiated approach is needed to prevent secondary traumatisation and burnout among employees in the Danish Children Centres. A total of 14 recommendations are provided to the Danish Children Centres:

- **General recommendations**
    - It is recommended that the Children Centres commit to longitudinal research on the development of burnout and secondary traumatisation to further develop our understanding of risk and protective factors for work-related distress over time that will aid in refining our understanding of effective strategies to preventing both outcomes.
    - The prevalence of burnout and secondary traumatisation was approximately equal among Danish Children Centre employees (n=5 and 7.3 % for secondary traumatisation, n=6 and 9.4 % for burnout), and therefore it is recommended that the Children Centres balance their efforts in preventing both outcomes accordingly.
- **Identification**
    - Secondary traumatisation: To identify employees at risk of secondary traumatisation, particular attention should be given to employees reporting experiences described in items 6-9 of the ProQoL-5

including feeling depressed because of others' trauma, feeling like one is experiencing the others' trauma, avoidance of reminders of others' trauma and intrusions of details of others' trauma. For screening purposes, any participants scoring 2 or more on these items on the ProQoL should be considered at risk for secondary traumatisation.

    - Burnout: To identify employees at risk of burnout, particular attention should be given to employees that feel worn out or weary, talk negative about work, feel like they cannot tolerate the pressure of work well, feel like they are increasingly performing their task automatically or mechanically and that does not feel that work is a positive challenge. For screening purposes, any participant scoring 3 or more on these items on the OLBI might be particular at risk for burnout.

- **Universal strategies for prevention:** Maximise organisational factors that were protective against both burnout and secondary traumatisation for all employees and minimise organisational factors that were detrimental. This includes:
    - Caseload: As a universal preventive strategy against both burnout and secondary traumatisation, it is recommended that the Danish Children Centres strive to balance caseload both in terms of size and quality.
    - Maximise employee opportunities for predictability and influence in their daily work. For example, increasing predictability through adequate and timely provision of information needed to solve tasks at

work as well as ensuring transparent decision processes and informing about changes and plans well in time is recommended.

  - Ensure opportunities for professional development of new skills as well as opportunities to apply newly acquisitioned skills. This might also include variation in work-tasks.
  - Ensure clarity and agreement on realistic goals for professional efforts in casework as well as employees' role in the organisation. However, this clarification should be undertaken in a collaborative manner between supervisors and employees to avoid eroding satisfaction with leadership quality. Overall, management that are able and willing to help employees prioritise their tasks and that prioritise employee satisfaction is protective against both secondary traumatisation and burnout.
  - Finally, employing individuals who are team-players and match the social group of employees as well as supporting the formation of sympathy and empathy among employees is important to maintain a main source of support for employees. The organisation in teams around case-work and regular case-conferences are suitable ways of doing so.

- **Selective strategies for prevention**: These strategies might be useful to counter the detrimental effect of specific elements of the core task of the Children Centres.
  - It is recommended that employees be provided with additional support in cases where:
    - employees are exposed to suicide or self-harm,

        - where single cases of child-abuse are particularly distressing for individual employees regardless of the reason.

    This support might be provided by the immediate supervisor, a close or experienced colleague in structured or unstructured conversation, or by a clinical supervisor depending on the needs and circumstances in the particular case.

  - The occurrence of role-conflicts in the Danish Children Centres should be further explored and minimised through renegotiation or clarification of responsibilities.
  - Particular attention should be given to employees who are witnessing forensic interviews, and prolonged exposure to multiple forensic interviews might be detrimental. Employees should be supported by having clear role-responsibilities in the monitoring room, and by having the opportunity to discuss the content with colleagues or a supervisor.

- **Indicated strategies for prevention:** These strategies might be helpful in countering the detrimental effect of individual vulnerabilities.
  - Employees with a personal history of trauma that affect their ability to work effectively with the core task or process the naturally occurring distress related to child protection work with survivors of abuse should have access to additional clinical supervision.
  - Employees who are not therapeutically trained but work with survivors of child abuse are recommended to seek out or be offered therapeutic training to further their ability to work effectively with the children as well as to support effective coping efforts and the formation of an strong professional identity.

7.5. Implications for theory and future research

The risk of burnout was higher among municipal and police employees compared to Children Centre employees, whereas the risk of secondary traumatisation was higher for Children Centre employees compared to municipal and police employees. Based on these findings, there appears to be is an increased risk for secondary traumatisation when employees are working highly specialised functions targeting individuals presumed to be particularly at risk for traumatic stress (Vang et al., 2020), suggesting that there is a particular onus on the Children Centres to consider the specific effect of the content of work in addition to the conditions of work. However, the increased risk for secondary traumatisation was not explicitly linked to working with these individuals insofar as typical weekly exposure ratio and type of cases throughout the past month was statistically nonsignificant predictors of being at risk for secondary traumatisation. Rather, the severity of distress among children as measured by suicide and self-harm in cases within the past year was predictive of the risk of both secondary traumatisation, but also burnout, suggesting that operational factors themselves might not be formative in predicting specific expressions of work-related distress such as secondary traumatisation, or alternatively, that the indicators employed in the present study was too crude to adequately measure an existing relationship. While exposure factors are small but statistically significant correlates of secondary traumatisation in a meta-analysis of studies among therapists with effect-sizes ranging between .12 and .19 for frequency and ratio, respectively (Hensel et al., 2015), it is not uncommon for individual studies to report null-findings regarding the relationship between indirect exposure and secondary traumatisation (Vang et al., 2018), and it is also not uncommon to refrain from observing the implications of this repeated finding for the theoretical conceptualisation of the construct and development of secondary traumatisation.

There might be several reasons for this, the most obvious being that it is not an issue for a single study to resolve. As probabilities of obtaining correlations of statistical significance is related to sample size that vary considerably across published studies it can be a reasonable approach to disregard null findings of studies with small sample sizes on account of power issues. Additionally, it is sanctioned behaviour as per the evidence hierarchy (Sackett, Straus, Richardson, Rosenberg & Haynes, 2000), to rely on findings from the meta-analysis in place of findings from a single study when evaluating the importance of indirect exposure to trauma. Furthermore, the null findings might be related to variation in the operationalisation of indirect trauma exposure. It is common practice to operationalise indirect trauma exposure using relatively nonspecific frequency measures such as caseload or workload (ex. Baugerud et al., 2018), or ratio-measures such as percentage of time spent in clinical confrontation (ex. Bonach & Heckert, 2012). Other studies more specifically inquire about the percentage of caseload consisting of traumatised individuals (ex. Devilly, Wright & Varker, 2009). However, it is unlikely that these measures perform equally well in assessing trauma exposure, and while a single indirect exposure is theoretically sufficient for the development of secondary traumatisation, it could be hypothesised that frequency of indirect exposure has to reach a certain threshold before the likelihood of having that one case that elicits the relatively rare phenomenon of secondary traumatisation is sufficiently high for it to be picked up in statistical analysis. Such frequency or severity is more likely to be encountered in specialised or therapeutic practice (as in studies meta-analysed by Hensel et al., 2015) than in other professional groups. This hypothesis could also be supported by the findings that engagement with the subjective experience of traumatisation in narrative exposure therapy increases the risk of secondary traumatisation among

military mental health service providers (Penix et al., 2019). Findings from the present study might also preliminarily support this hypothesis as the risk for secondary traumatisation appeared to be higher among Children Centre employees who are solely working with children exposed to PTEs, compared to municipal employees and police officers with more diverse caseloads. Alternatively, different job roles might moderate the association between indirect trauma exposure for developing secondary traumatisation (Raouvola et al., 2019). Specifically, the core tasks of Children Centre employees include assessing the emotional impact of suspected child abuse and providing crisis support to children and affected caregivers. These core tasks induce a higher risk for exposure to the psychological consequences of trauma and requires a high level of emotional engagement with these reactions compared to the more objective task of police prosecutors of assessing whether or not a criminal offence has taken place in a case of suspected child abuse. Interestingly however, an examination of the association between ratio of time spent in face to face interaction with children and secondary traumatisation across professional groups in the current study found that there was a non-significant correlation for municipal employees ($r = .039$, $p = .361$) and Children Centre employees ($r = .189$, $p = .138$), whereas there was a significant positive correlation for police employees ($r = .277$, $p = .032$). Similar results occurred for ratio of time spent working with case-material or talking to other professionals about the case where the only significant correlation was found for police employees ($r = .266$, $p = .038$), which might also suggest that there could be different pathways to developing secondary traumatisation depending on one's professional role in relation to the indirect trauma exposure. Further research is required that explores the ability of these hypotheses of power issues, operationalisation variability, the relative

importance of frequency, severity and duration of exposure as well as the potentially moderating role of professional role obligations to explain variability in the relationship between indirect trauma exposure and secondary traumatisation. Findings that illuminate this relationship will be of pivotal importance to the further development of theoretical frameworks for understanding the impact of and interaction of operational and organisational factors for occupational well-being in human service work.

The partial separation of occupational distress into burnout and secondary traumatisation supports Charles Figley's (2002) initial theoretical conceptualisation of secondary traumatisation as a construct separate from burnout. Findings from the present study however also suggested that referring the risk of secondary traumatisation following indirect exposure to a chronic lack of self-care among clinicians alone (Figley, 2002) is an unwarranted individualisation of a structural issue that disregards the conditions necessary for effective professional self-care. While the use of self-cares strategies itself was not assesses in the present study, several organisational factors were related to the risk of secondary traumatisation as has been reported in previous research among other professionals (Devilly, Wright & Varker, 2009; Regehr et al., 2004). Additionally, research on the use and helpfulness of self-care strategies has reported a disconnect between the belief in the helpfulness of a self-care strategy and time spent on that strategy, no relationship between time spent on self-care strategies and reduction of secondary traumatic stress symptoms (Bober & Regehr, 2006), an ineffectiveness that appears to extend even to trauma-informed self-care strategies that appear to be unrelated to the risk of secondary traumatisation (Salloum et al., 2015). Hence, future research should focus on further developing our understanding of the dual role of organisational factors for both

burnout and secondary traumatisation in place of individualised strategies to aid preventive efforts against secondary traumatisation and burnout.

7.6. Conclusion

The present study was the first to introduce the construct of secondary traumatisation in Denmark and to survey the prevalence of burnout among Danish child protection workers specifically. Results from the survey suggested that secondary traumatisation and burnout are distinct but related syndromes of work-related distress, and that approximately one in five Danish child protection workers were at risk for one of these. Burnout was the most prevalent syndrome with 18.3 % at risk. Out of these, 2 % were additionally at risk for secondary traumatisation, and an additional 2 % were at risk for secondary traumatisation alone. The syndromes were approximately equally prevalent among employees in the Danish Children Centres, although compared to the prevalence rates across the municipalities and police districts, Danish Children Centre employees were at higher risk for secondary traumatisation than both these professional groups. However, the prevalence estimates are likely to underestimate the occurrence of secondary traumatisation and burnout among municipal and police employees due to the limited participation rate from these professionals. The relationship between burnout and secondary traumatisation and individual, operational and organisational factors has been inconsistently studied in the international literature, and findings from the present study suggested that there were shared risk and protective factors as well as specificity in the relationship between organisational and individual factors and burnout and secondary traumatisation. Based on these findings as well as recommendations in existing literature, differentiated preventive efforts are required to effectively protect employees from developing either syndrome, and additional

longitudinal research is needed to further identification of effective strategies as well as our understanding of the mechanisms accounting for the effect of these strategies. Recommendations for prevention of burnout and secondary traumatisation in provided in the present thesis are based on best available evidence, however, this evidence is limited by the cross-sectional nature of the current study and existing research as well as the selection bias of the current study. Consequently, these recommendations should be conceived of as potentially effective strategies based on best available evidence and should only be implemented with these limitations in mind.

Appendices

Contents

Appendix 1: Supplementary tables 2.2.5.S. A and B

Table 2.2.5.S.A. Overview of quality assessment of studies included in the systematic literature review

Criteria (all scored Yes/No or CD, cannot determine; NA, not applicable; NR, not reported)	Baldschun (2017)	Baugerud (2018)	Brady (2017)	Fisackerly (2016)	Killian (2008)	McGarry (2013)	Perez (2010)	Perron (2006)	Robins (2009)	Salloum (2015)	Sprang (2011)	Tehrani (2016)	Weintraub (2016)
Rating	**A**	**A2**	**A3**	**B**	**B3**	**A4**	**A5**	**A6**	**B7**	**A8**	**A9**	**C10**	**A11 (B)**
Score (Summed number of 'yes'/green)	9	9	8	7	5	8	8	9 (10)	7 (8)	9	8 (9)	5	7 (8)
1. Purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Target population	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Coverage error	Yes	Yes	Yes	Yes	CD	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4. Sampling error	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	CD	Yes	Yes	Yes
5. Nonresponse error	Yes	Yes	CD	CD	NR	Yes	Yes	Yes/No	CD	Yes	CD/NO	CD	No
6. Statistical power	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No	No
7. Exposure variability	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes
8. Independent variable validity	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9. Dependent variable validity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes/No	Yes	Yes/No	No	Yes/No
10. Reporting	Yes	CD	CD	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Score (Summed number of 'yes')	9	9	8	7	5	8	8	9 (10)	7 (8)	9	8 (9)	5	7 (8)
Score (summed number of 'no')	1	1	1	2	3	2	1	0 (1)	2 (3)	0	0 (2)	4	2 (3)

A-rating	8-10 yes (green)												
B-rating	6-7 yes (green)												
C-rating	5 or less yes (green)												
Pass = Green, fail = Red, NR/CD = Yellow													

Table 2.2.5.S.B. Full quality assessment of studies included in the systematic literature review

Criteria (all scored Yes/No or CD, cannot determine; NA, not applicable; NR, not reported)	Baldschun (2017)	Baugerud (2018)	Brady (2017)	Fisackerly (2016)	Killian (2008)	McGarry (2013)	Perez (2010)	Perron (2006)	Robins (2009)	Salloum (2015)	Sprang (2011)	Tehrani (2016)	Weintraub (2016)
Rating	**A**	**A2**	**A3**	**B**	**B3**	**A4**	**A5**	**A6**	**B7**	**A8**	**A9**	**C10**	**A11 (B)**
Score (Summed	9	9	8	7	5	8	8	9 (10)	7 (8)	9	8 (9)	5	7 (8)

number of 'yes'/green)													
1. Purpose: Was the research question or objective in this paper clearly stated?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Target population: Was the study population clearly specified and defined?	Yes (Finnish social workers, split in CW/nonCW)	Yes (Norwegian CPW)	Yes (ICAC personnel, not explicitly restricted to a country)	Yes (certified child life specialists, not explicitly restricted to a country)	Yes (Therapists specialized in treatment of trauma-survivors)	Yes (Paediatric health care professionals)	Yes (ICAC, not explicitly restricted to a country)	Yes (forensic interviewers of abused children, not explicitly restricted to a country)	Yes (employees at a children's hospital)	Yes (CWW, not explicitly restricted to a country)	Yes (CWW, not explicitly restricted to a country)	Yes (ICAC personnel, not explicitly restricted to a country)	Yes (neonatalogists in the US)

3. Coverage error (degree of overlap between target population and frame population): Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion	Yes (Sampling frame: data from longitudinal cohort study of 10 minucipalities in Finland. Inclusion: social worker. Exclusion: other professional groups)	Yes (sampling frame: 260/428 municipalities registred with the Norwegian child protection organizatoin. 27 randomly selected. Inclusion: CPW. Exclusion: NR)	Yes (sampling frame: contact list of all 61 organizsed task-forces across US, listerv, snowballing. inclusion: ICAC affiliation, exclusion: NR)	Yes (Sampling frame: Child Life Councils online forum. Inclusion: Certified child life specialist. Exclusion: students and others. Unclear if retirees, associates or interdisciplinary profs were excluded but it would seem so)	CD (primarily profs working with children referred to CPS for sexual abuse, some also treated adults, and there were 5 different types of councellors/therapists in sample)	Yes (sampling frame: all professionals in a children hopsital in Western Australia. No explicint in/ex-crit. 11 different professions but from the same hospital)	Yes (sampling frame: convenience, in/ex not stated, presumed to be exposure to ICAC as both police and civilians were included)	Yes (sampling frame: list of organizations from NCA website (n=301), requesting contact info for FI's matching the study purpose. Exclusion: less than 25 % of job time related to FI)	Yes (sampling frame: all employees across relevant faculties in one hospital (4 different professions), inclusion: everything from mentioned faculties, exclusion: everyone else)	Yes (sampling frame: CPW in Florida, inclusion: participated in training in TISC, exclusion: self-exclusion)	Yes (sampling frame: contact information obtained from relevant professional board rosters and electronical announcements and invitations forwared from boards and committees of relevance. Inclusion: relevant professional group	Yes (sampling frame: two UK ICAC departments conducting mandatory screening adn support session), inclusion: part of the screening, exclusion: NR	Yes (sampling frame: email list gathered from American and Canadian professional associations, inclusion: faculty only, exclusion: fellows, incomplete CFST-replies)

criteria for being in the study prespecified and applied uniformly to all participants?											beh. Health, trauma-focused), exclusion: NR)		
4. Sampling error (is there expected variability in the sample statistics compatred to the target populatio	Yes (10 municipalities)	Yes (27 sites)	Yes (56/61 organized taskforces represented)	Yes (through the online forum, it is assumed that professionals across multiple organizat	Yes (three large metropolitan areas in a large southern United State)	No (only 1 organization sampled)	No (only 1 organization sampled)	Yes (75 centres provided for 125 Fis, 115 succesfully delivered, 66 replied, 6 excluded, N=60)	No (only 1 organization sampled)	CD (large private child protection organization in Florida, but data is collected follow 3 different	Yes (specific N NR)	Yes (two UK forces)	Yes (national sample)

n or were some units given no chance to participate?): Was the sample (attempted to be) recruited from more than one organization?				ions participated)						trainings, suggesting that it might be 3 different departments hosted under the same organization)			
5. Nonresponse error: Was the participation rate of eligible persons at least 50%?	Yes (68,4 %, N= 888, 364 CPW)	Yes (75 %, N = 506)	CD (95,6% completed their survey once started, N = 443)	CD (5000 users of the forum, comprised of many different types of professionals, see above, N = 154)	NR (N = 104)	Yes (80 %, N = 54)	Yes (84,8%, N = 28)	Yes (on participant level, 60 %) No (on organizational level 75/301(211))	CD (N=314)	Yes (80 % - 100 %, average: 90 %, N = 104)	CD/No (information lacking from 3 organizations => prevents determination. 668/2608 participated)	CD (N=126)	No (47.1 %), n= 433

6. Statistical power: Was a sample size justification, power description, or variance and effect estimates provided ?	No	No	No	No	No	No (however, limitations mention that study is underpowered for subgroup analyses)	No	Yes (p = .10)	Yes (medium effect size at p = .01)	Yes (88 cases needed for power of .8 for a small effect of .2 and type 1 error lvl of .017 and 5 predictors)	Yes (over .90)	No	No
7. For factors that can vary in amount or level, did the study examine different levels of the exposure as related to the	Yes (CPW/nonCPW)	Yes (cont. of all factors, but did not include measure of trauma exposure)	Yes (trauma history, ICAC tenure, weekly hours, average age of victim)	Yes (level of patient acuity, number of traumatized patients in past month, time since last interaction with traumatiz	Yes (average number of cases, average years in service)	Yes (cont. Measures of coping and resilience, no measures of exposure)	Yes (time with cases, first exposure, n of cases)	Yes (% time spent with FI, type of cases, number of interviews)	Yes (cont or cat of factors but no measure of trauma exposure)	Yes (but did not include a measure of trauma-exposure)	Yes (CW/not CW, no measure of trauma exposure)	N/A (exposure to degrees of personality is not applicable)	Yes (years in field, type of situations in past month)

outcome (e.g., categories of exposure, or exposure measured as continuous variable)? (exposure variability)				ed patient, time since last patient death)								
8. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study	Yes (above only)	Yes	Yes (above)	Yes (above)	No (some were not described at all and some were insufficiently described)	Yes (other factors: coping and resilience)	Yes (above and support, distrust and protectiveness)	Yes (above)	Yes (minor issue around the use of EFA to determine structure of coping scale but this appears to be in accordance with the	Yes	Yes	Yes (personality, sex)	Yes (above)

participants? (independent variable validity)									author of the scale's recommendations)				
9. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants? (dependent	Yes (for the ProQoL)	Yes	Yes	Yes (ProQoL-5)	Yes	Yes	Yes	Yes	Yes/No (consistently implemented, but the scoring of the BO subscale that is at best impenetrably reported, at worst wrong. The CFST is described as a 5-point scale	Yes	Yes/No (consistently implemented but issues with the scoring where the SD of the CF-scale suggests that the variation around the mean goes beyond the minimal possible	No (lack of definition and description of 3 outcomes, uses cutoffs that are unspecified)	Yes/No (uses a valid instrument but an adapted version of this and self-invented cut-offs)

variable validity)									going from 0-6, and the max-score on the 17-item BO-scale (=80) is inconsistent with both pieces of information)		score on the scale)		
10. Were statistical analyses accurately and sufficiently reported? (reporting)	Yes (for the ProQoL)	CD (there appears to be errors in table 2 and 3, the rest appears OK)	CD (there appears to be erroneous reporting of standardized beta values in table 2)	No (issues around reporting p-values where some are negative (p = -.01) and other are inaccurately reported when	No (insufficient description of variables in multiple regression, unclear report of beta-values (standardized/unst	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

				higher than .05 (p > .05))	andardized?))								
Score (Summed number of 'yes'/green)	9	9	8	7	5	8	8	9 (10)	7 (8)	9	8 (9)	5	7 (8)
Score (summed number of 'no')	1	1	1	2	3	2	1	0 (1)	2 (3)	0	0 (2)	4	2 (3)

Appendix 2: Data processing agreement

DATA PROCESSING AGREEMENT

This Agreement is dated **6th of March 2018** and made between

Ditte Askerod on behalf of The Danish Children Center, Region Southern Denmark, Municipality of Odense (Sanderumvej 105, 5250 Odense SV)

And

Maria Louison Vang (19 Park Avenue, BT480EH Derry)

Mark Shevlin (Magee Campus, Ulster University, Northland Rd, Londonderry BT48 7JL)

This agreement is between Maria Louison Vang and Mark Shevlin and Ditte Askerod on behalf of The Danish Children Center, Region, Southern Denmark, Municipality of Odense (the parties) and sets out the conditions, agreed between the parties, under which the data collected during the project "Work-related well-being in professionals working with survivors of child abuse" can be accessed and used after the project has ended.

Definitions

Confidential Information: all confidential information (however recorded or preserved) disclosed by a party or its employees, officers, representatives, advisers or subcontractors involved in the provision, processing or receipt of the Data who need to know the confidential information in question, which is either labelled as such or else which should reasonably be considered as confidential because of its nature and the manner of its disclosure.

Data: any data or information, in whatever form, including images, still and moving, and sound recordings, including personal data, and for the purposes of the project, as further defined in schedule 1 to this agreement.

Data Controller: has the meaning set out in section 1(1) of the Data Protection Act 1998.

Data Subject: an individual who is the subject of personal data, as defined in the Data Protection Act 1998

Personal Data is as defined in the Data Protection act 1998

The Project: The ph.d.-project “Work-related well-being in professionals working with survivors of child abuse”. Commenced March 2017, scheduled to end March 2020.

Agreement

It is agreed between the parties that, following completion of the project, Maria Vang and Mark Shevlin shall retain a copy of the raw data from the project.

It is agreed between the parties that, following completion of the project,

1. All requests for use of data or access to data after the project has ended must be made through the “Data application form” (see next page).
2. All parties of this contract must participate in processing requests for use of data or access to data.
3. If access to data is granted to an applicant, Mark Shevlin is responsible for transferring data to the applicant in accordance with the current legislation.
4. There will be an exemption-period of three years where requests for access to the data and use of the data will be automatically declined to ensure that the parties of the contract can pursue additional research questions in the data.

It is agreed between the parties that, following completion of the project, The Danish Children Center, Region Southern Denmark, Municipality of Odense shall

5. Have full authority to access, in accordance with relevant legislation, the data for additional analysis after the project has ended to the extent that respondents’ confidentiality is preserved;
6. Be a party to any decisions made regarding the use of data after the project has ended;
7. In matters of disagreement on point 2 or 3, the Children Center, Region Southern Denmark, Municipality of Odense has full authority to decline and prevent;
    a. use of data
    b. access to data

Access is granted as set out at points above on the basis that The Danish Children Center, Region Southern Denmark, Municipality of Odense and any external applicant shall respect the confidentiality of any commitments given to project respondents and shall not have access to personal data as defined by the Data Protection Act 1998.

This agreement is governed by the laws of Northern Ireland and each of the parties irrevocably submits to the exclusive jurisdiction of the Courts of Northern Ireland

Date and signature of parties:

_____

(Ditte Askerod)

_____

_____

(Mark Shevlin) (Maria Louison Vang)

Data application form

All use of data or requests for access to data collected in the ph.d.-project: "Investigating secondary traumatisation and burn-out in professionals working with survivors of child abuse" after the end of the project must be filed using this form.

Requesting access to data: Please fill in section 1 and 2 and forward the form including relevant appendices to The Children Center, Region Southern Denmark, Municipality of Odense on boernehussyd@odense.dk marked "Data application form – access to data".

Requesting use of data: Please fill in section 1 and forward the form including relevant appendices to The Children Center, Region Southern Denmark, Municipality of Odense on boernehussyd@odense.dk marked "Data application form – use of data".

SECTION 1

Project title:_____

Principal investigator contact-information. Please fill in the following information about yourself.

Full name:_____

Title:_____

E-mail:_____

Phone-number: _____

Institution:_____

Department:_____

Address:_____
_____

City:_____
_____

ZIP:_____
_____

Country:_____
_____

Additional investigators. Please fill in the following information on your co-investigators. Please copy and paste the fields below as many times as necessary. **If the principal investigator is the sole investigator, please indicate here:** ☐

Full Name:
_____

E-mail:
_____

Institution/organization:
_____

Research description Please enter a description(s) of why you need the requested data.

Your description(s) should address 1) the topic of the proposed research and 2) why the restricted data are required.

_____

_____

_____

_____

_____

_____

_____

SECTION 2

Data selection. Please indicate what variables you are interested in receiving the data on. The code-book containing description of the variables can be obtained by contacting prof. Mark Shevlin on m.shevlin@ulster.ac.uk.

_____

_____

_____

_____

_____

Confidential Data Security Plan. Below are the available plans for storing and analyzing the restricted-use data. Once you have selected the data storage location, review the corresponding requirements before filling out the data security plan.

	Plan	Description
☐	**External hard drive**	Select this plan if you will store the restricted-use data on an external hard drive and use a computer not connected to another computer or networked device to analyse the data. In this plan you must physically disconnect the computer from all networks before plugging in the external hard-drive that contains the data.
☐	**Non-networked computer**	This plan is for researchers who want to store and analyse the data on a stand-alone desktop computer. A stand-alone computer is one that is in no way connected to another computer or networked device such as a switch or router.
☐	**Private-networked computer**	Use this plan if you will store and analyze the data on a private network (two or more computers and/or network devices, e.g., printer, switch, router that are not connected in any way to the Internet or a LAN).

PLEASE NOTE: Once obtained, all data must be stored, accessed and processed in accordance with the Data Protection Act 1998.

Internal Review Board (IRB) Review Approval. IRB approval for your research project and confidential data security plan is required. If you have not yet completed the section on Confidential Data Security Plan, please do so now. Be sure to include this information in your application for IRB approval.

Once you have IRB approval for your project, please attach the letter of approval from your IRB to this application.

All applicants must upload the IRB approval document regardless of exemption status.

SECTION 3

Memorandum of agreement (to be completed when access to- or use of data has been approved by The Children Center, Region Southern Denmark, Municipality of Odense).

The following has been agreed upon regarding access to data:

_____

_____

_____

_____

The following has been agreed upon regarding use of data:

_____

_____

_____

_____

Date and signature of parties:

_____

(Applicant)

_____

(The Children Center, Region Southern Denmark, Municipality of Odense)

_____ _____

(Mark Shevlin) (Maria Louison Vang)

Appendix 3: Regional Ethics Committee Evaluation, Denmark

This document is dated 14th of March, 2018

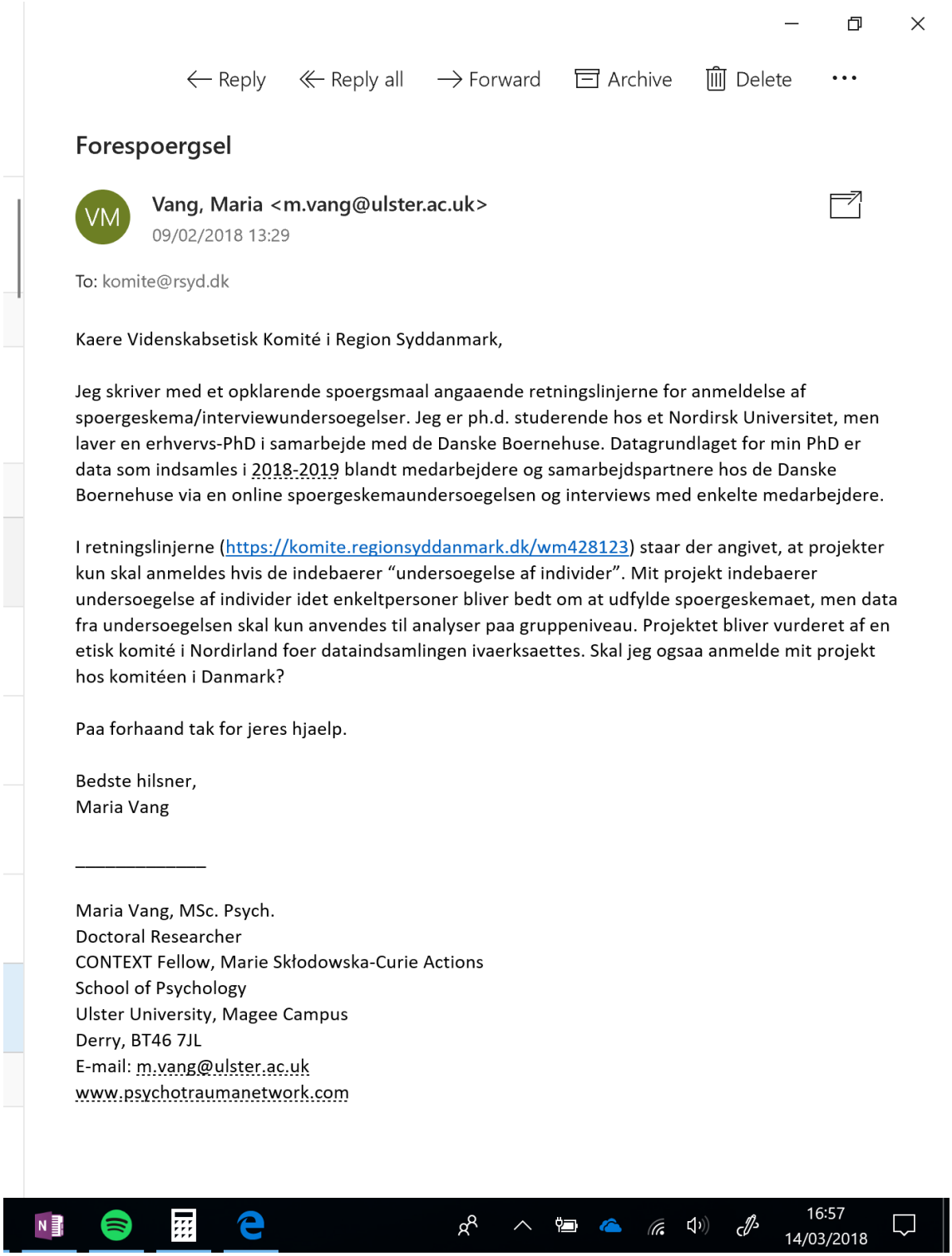
ESR-7 inquiry reg. ethics- and data-application in Denmark

The content of this document detail the inquiries directed at the Danish research governing bodies (ethics: The Regional Ethics Committee, Region Southern Denmark, data-protection: Danish Data Protection Agency) reg. the data-collection for ESR-7 in Denmark.

The inquiries were submitted and processed during February 2018 with the conclusion that no formal application is necessary due to the nature of the project, if data-collection is initiated after the 25th of May 2018. Data-collection on the project will be commenced after this date.

Content

Original inquiry for the Regional Ethics Committee, Region Southern Denmark



← Reply ← Reply all → Forward Archive Delete ...

Forespoergsel

VM

Vang, Maria <m.vang@ulster.ac.uk>
09/02/2018 13:29

To: komite@rsyd.dk

Kaere Videnskabsetisk Komité i Region Syddanmark,

Jeg skriver med et opklarende spoergsmaal angaaende retningslinjerne for anmeldelse af spoergeskema/interviewundersoegelser. Jeg er ph.d. studerende hos et Nordirsk Universitet, men laver en erhvervs-PhD i samarbejde med de Danske Boernehuse. Datagrundlaget for min PhD er data som indsamles i 2018-2019 blandt medarbejdere og samarbejdspartnere hos de Danske Boernehuse via en online spoergeskemaundersoegelsen og interviews med enkelte medarbejdere.

I retningslinjerne (https://komite.regionsyddanmark.dk/wm428123) staar der angivet, at projekter kun skal anmeldes hvis de indebaerer "undersoegelse af individer". Mit projekt indebaerer undersoegelse af individer idet enkeltpersoner bliver bedt om at udfylde spoergeskemaet, men data fra undersoegelsen skal kun anvendes til analyser paa gruppeniveau. Projektet bliver vurderet af en etisk komité i Nordirland foer dataindsamlingen ivaerksaettes. Skal jeg ogsaa anmelde mit projekt hos komitéen i Danmark?

Paa forhaand tak for jeres hjaelp.

Bedste hilsner,
Maria Vang

_____

Maria Vang, MSc. Psych.
Doctoral Researcher
CONTEXT Fellow, Marie Skłodowska-Curie Actions
School of Psychology
Ulster University, Magee Campus
Derry, BT46 7JL
E-mail: m.vang@ulster.ac.uk
www.psychotraumanetwork.com

16:57
14/03/2018

English translation of inquiry for the Regional Ethics Committee, Region Southern Denmark

Dear Regional Ethical Committee in the Region of Southern Denmark,

I'm writing with a clarifying question regarding the guidelines for report and notification to the committee of questionnaire / interview surveys. I am a PhD student at Ulster University undertaking a PhD in collaboration with the Danish Children Centers. The data for my PhD will be collected in 2018-2019 among employees and collaborators at the Danish Children Centers via an online questionnaire survey and interviews with individual employees.

The guidelines (https://komite.regionsyddanmark.dk/wm428123) for reporting projects state that projects must be reported only if they involve "examination of individuals". My project involves examining individuals as individuals are asked to fill in the questionnaire, but data from the study will only be used for analysis on group-level. The project is undergoing evaluation by an ethics committee in Northern Ireland before the collection of data will be commenced. Must I report my project to the committee in Denmark in addition to this?

Thank you in advance for your help.

Best wishes,

Maria Vang

_____

Maria Vang, MSc. Psych.
Doctoral Researcher
CONTEXT Fellow, Marie Skłodowska-Curie Actions
School of Psychology
Ulster University, Magee Campus
Derry, BT46 7JL
E-mail: m.vang@ulster.ac.uk
www.psychotraumanetwork.com

Original reply from the Regional Ethics Committee, Region Southern Denmark

CF **Christina Sølvsten Fly <Christina.Soelvsten.Fly@rsyd.dk>**
14/02/2018 09:13

To: Vang, Maria

Kære Maria Vang.
De Videnskabsetiske Komitéer for Region Syddanmark har modtaget nedstående forespørgsel om, hvorvidt dit projekt er anmeldelsespligtigt i henhold til Komiteloven. Din henvendelse har fået sagsnummer S-20182000-26,

Ud fra de foreliggende oplysninger har komitéen besluttet, at projektet **ikke** er anmeldelsespligtigt til det videnskabsetiske komitésystem, jf. § 14, stk. 1 i lov om videnskabsetisk behandling af sundhedsvidenskabelige forskningsprojekter (komiteloven).

Der er ved afgørelsen lagt vægt på, at der synes at være tale om sprøgeskemaprojekt, som falder uden for rammerne af komitélovens definition af et anmeldelsespligtigt sundhedsvidenskabeligt forskningsprojekt.

I medfør af komitélovens § 14, stk. 2 skal spørgeskemaundersøgelser og sundhedsvidenskabelige registerforskningsprojekter kun anmeldes til det videnskabsetiske komitésystem, såfremt projektet omfatter menneskeligt biologisk materiale.

Såfremt et sundhedsvidenskabeligt forskningsprojekt skal falde inden for rammerne for anmeldelsespligtigt til komitésystemet, skal projektet, jævnfør retningslinjer fra National Videnskabsetisk Komité, både have et
sundhedsvidenskabeligt formål og medføre en intervention: http://www.nvk.dk/forsker/naar-du-anmelder/hvilke-projekter-skal-jeg-anmelde.

Projektet skal i sin nuværende form i stedet evt. anmeldes til Datatilsynet.

Sagen er behandlet af formanden for Komité 2, dr. med., professor, overlæge, Jens Michael Hertz.

Komiteens afgørelse kan, jf. komitelovens § 26, stk. 1, indbringes for National Videnskabsetisk Komite (NVK), senest 30 dage efter afgørelsen er modtaget. NVK kan, af hensyn til sikring af forsøgspersonernes rettigheder, behandle elementer af projektet, som ikke er omfattet af selve klagen.

Klagen skal indbringes elektronisk og ved brug af digital signatur og kryptering, hvis protokollen indeholder fortrolige oplysninger. Dette kan ske på adressen: dketik@dketik.dk

Klagen skal begrundes og være vedlagt kopi af den regionale videnskabsetiske komites afgørelse samt de dokumenter/oplysninger, som den regionale videnskabsetiske komite har truffet afgørelse på grundlag af.

Hvis afgørelsen påklages til NVK, bør der ikke foretages indholdsmæssige ændringer i projektmateriale, da projektet ellers vil blive sendt retur til komiteen til fornyet førsteinstansbehandling.

Venlig hilsen

Christina Sølvsten Fly
Administrativ koordinator
Kvalitet og Forskning, De Videnskabsetiske Komitéer for Region Syddanmark

E-mail: Christina.Soelvsten.Fly@rsyd.dk
Direkte: 76638221
Mobil: 29202252

Region Syddanmark
Regionshuset
Damhaven 12, 7100 Vejle
Hovednummer:7663 1000
www.rsyd.dk

English translation of reply from the Regional Ethics Committee, Region Southern Denmark

Dear Maria Vang.

The Scientific Ethics Committees for the Region of Southern Denmark have received the following query as to whether your project is required to be reported under the Comitology Act. Your inquiry has been given Case Number S-20182000-26,

Based on the available information, the committee has decided that the project is not required to be reported to the Scientific Committee, cf. section 14 1 in the Act on Scientific Ethics of Health Science Research Projects (Comitology Act).

The decision emphasizes that it seems to be a questionnaire project that falls outside the scope of the committee's definition of a notifiable health science research project.

Pursuant to section 14 (1) of the Committee Act. 2, questionnaire surveys and health science registry research projects shall only be reported to the Scientific Ethics Committee if the project includes human biological material.

If a health science research project is to fall within the scope of notification to the committee system, the project, according to the guidelines of the National Science Ethics Committee, must have a health science purpose and cause an intervention: http://www.nvk.dk/forsker/naar-du-anmelder/hvilke-projekter-skal-jeg-register.

Instead, the project may need to be reported to the Danish Data Protection Agency.

The case has been dealt with by the chairman of committee 2, dr. with., Professor, Chief Physician, Jens Michael Hertz.

The committee's decision may, cf. section 26, subsection 1, shall be submitted to the National Science Ethics Committee (NVK), no later than 30 days after the decision has been received. NVK may, for the purpose of ensuring the rights of subjects, treat items of the project that are not covered by the complaint itself.

Any complaint must be submitted electronically and using digital signature and encryption if the protocol contains confidential information. This can be done at: dketik@dketik.dk

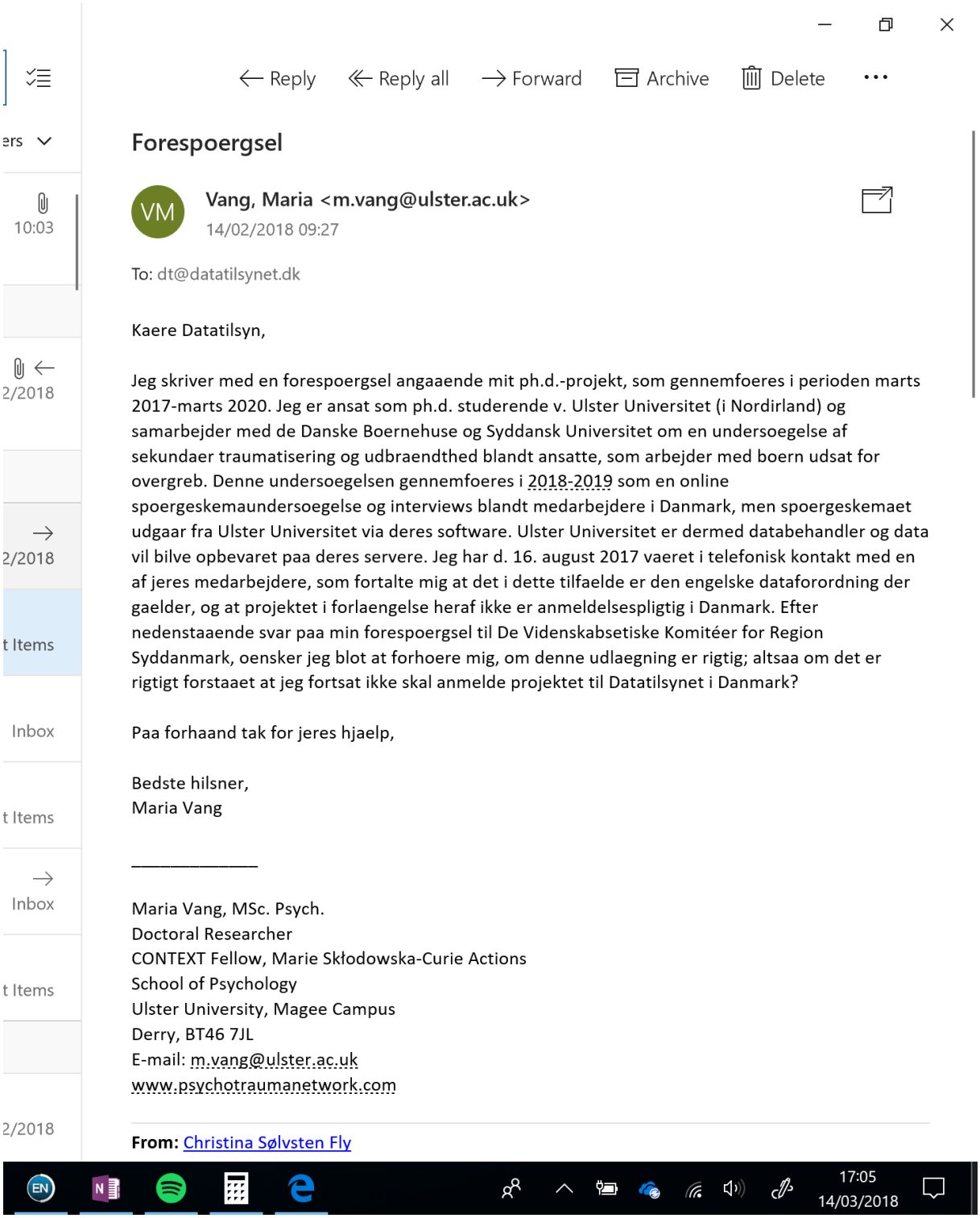
The complaint must be justified and accompanied by a copy of the decision of the Regional Scientific Committee and the documents / information that the Regional Scientific Committee has decided on.

If the decision is appealed to NVK, there should be no substantive changes in project material, as the project will otherwise be returned to the committee for renewed initial examination.

Sincerely

Christina Soelvsteen Fly
Administrative Coordinator
Quality and Research, the Scientific Ethics Committees for the Region of Southern Denmark
E-mail: Christina.Soelvsten.Fly@rsyd.dk
Direct: 76638221
Mobile: 29202252

Appendix 4: Danish Data Protection Agency Evaluation



← Reply ← Reply all → Forward Archive Delete ...

Forespoergsel

VM **Vang, Maria <m.vang@ulster.ac.uk>**
14/02/2018 09:27

To: dt@datatilsynet.dk

Kaere Datatilsyn,

Jeg skriver med en forespoergsel angaaende mit ph.d.-projekt, som gennemfoeres i perioden marts 2017-marts 2020. Jeg er ansat som ph.d. studerende v. Ulster Universitet (i Nordirland) og samarbejder med de Danske Boernehuse og Syddansk Universitet om en undersoegelse af sekundaer traumatisering og udbraendthed blandt ansatte, som arbejder med boern udsat for overgreb. Denne undersoegelsen gennemfoeres i 2018-2019 som en online spoergeskemaundersoegelse og interviews blandt medarbejdere i Danmark, men spoergeskemaet udgaar fra Ulster Universitet via deres software. Ulster Universitet er dermed databehandler og data vil bilve opbevaret paa deres servere. Jeg har d. 16. august 2017 vaeret i telefonisk kontakt med en af jeres medarbejdere, som fortalte mig at det i dette tilfaelde er den engelske dataforordning der gaelder, og at projektet i forlaengelse heraf ikke er anmeldelsespligtig i Danmark. Efter nedenstaaende svar paa min forespoergsel til De Videnskabsetiske Komitéer for Region Syddanmark, oensker jeg blot at forhoere mig, om denne udlaegning er rigtig; altsaa om det er rigtigt forstaaet at jeg fortsat ikke skal anmelde projektet til Datatilsynet i Danmark?

Paa forhaand tak for jeres hjaelp,

Bedste hilsner,
Maria Vang

———————

Maria Vang, MSc. Psych.
Doctoral Researcher
CONTEXT Fellow, Marie Skłodowska-Curie Actions
School of Psychology
Ulster University, Magee Campus
Derry, BT46 7JL
E-mail: m.vang@ulster.ac.uk
www.psychotraumanetwork.com

From: Christina Sølvsten Fly

17:05
14/03/2018

English translation of inquiry for the Danish Data Protection Agency

Dear Data Protection Agency,

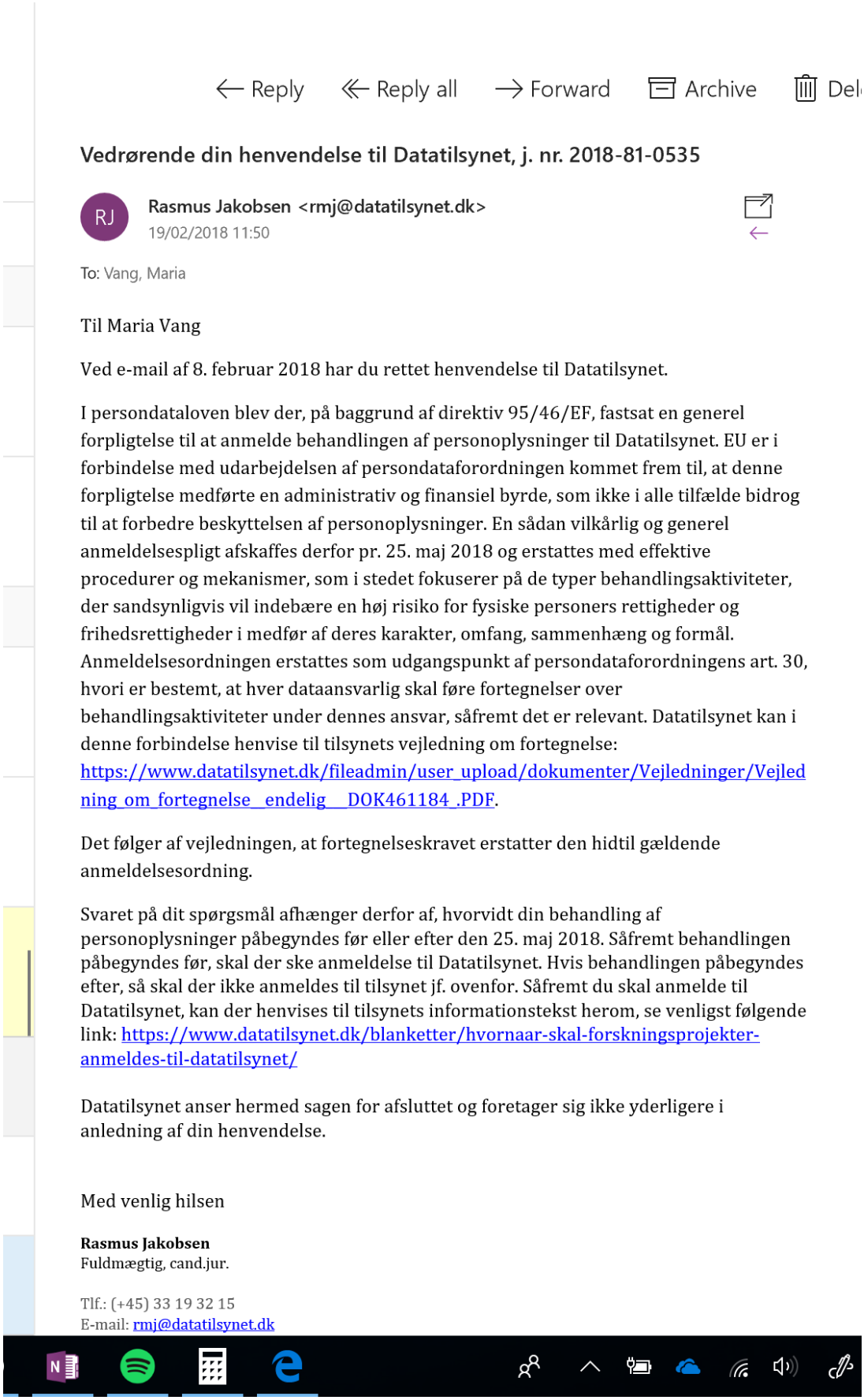
I am writing with a clarifying question regarding my PhD project carried out from March 2017 to March 2020. I am employed as a PhD. student at Ulster University (in Northern Ireland) and I am collaborating with the Danish Children Centers and University of Southern Denmark about an investigation of secondary traumatization and exploitation of employees working with survivors of child abuse. This investigation will be conducted in 2018-2019 as an online questionnaire survey and interviews among employees in Denmark. The questionnaire is issued by Ulster University via their software Qualtrics. Ulster University is thereby owner of data and responsible for data, and data will be stored on their servers. On August 16, 2017, I have been in contact with one of your employees, who informed me that this being so, only the English data regulations apply and consequently that the project need not be reported in Denmark. Following the response on my inquiry to the Regional Ethics Committee, Region of Southern Denmark below, I'm writing to clarify whether this is still so; e.g. that I still do not need to report the project to the Danish Data Protection Authority in Denmark?

Thank you in advance for your help,

Best wishes,

Maria Vang

Original reply from the Danish Data Protection Agency



← Reply ← Reply all → Forward Archive Del

Vedrørende din henvendelse til Datatilsynet, j. nr. 2018-81-0535

RJ **Rasmus Jakobsen <rmj@datatilsynet.dk>**
19/02/2018 11:50

To: Vang, Maria

Til Maria Vang

Ved e-mail af 8. februar 2018 har du rettet henvendelse til Datatilsynet.

I persondataloven blev der, på baggrund af direktiv 95/46/EF, fastsat en generel forpligtelse til at anmelde behandlingen af personoplysninger til Datatilsynet. EU er i forbindelse med udarbejdelsen af persondataforordningen kommet frem til, at denne forpligtelse medførte en administrativ og finansiel byrde, som ikke i alle tilfælde bidrog til at forbedre beskyttelsen af personoplysninger. En sådan vilkårlig og generel anmeldelsespligt afskaffes derfor pr. 25. maj 2018 og erstattes med effektive procedurer og mekanismer, som i stedet fokuserer på de typer behandlingsaktiviteter, der sandsynligvis vil indebære en høj risiko for fysiske personers rettigheder og frihedsrettigheder i medfør af deres karakter, omfang, sammenhæng og formål. Anmeldelsesordningen erstattes som udgangspunkt af persondataforordningens art. 30, hvori er bestemt, at hver dataansvarlig skal føre fortegnelser over behandlingsaktiviteter under dennes ansvar, såfremt det er relevant. Datatilsynet kan i denne forbindelse henvise til tilsynets vejledning om fortegnelse: https://www.datatilsynet.dk/fileadmin/user_upload/dokumenter/Vejledninger/Vejledning_om_fortegnelse__endelig__DOK461184_.PDF.

Det følger af vejledningen, at fortegnelseskravet erstatter den hidtil gældende anmeldelsesordning.

Svaret på dit spørgsmål afhænger derfor af, hvorvidt din behandling af personoplysninger påbegyndes før eller efter den 25. maj 2018. Såfremt behandlingen påbegyndes før, skal der ske anmeldelse til Datatilsynet. Hvis behandlingen påbegyndes efter, så skal der ikke anmeldes til tilsynet jf. ovenfor. Såfremt du skal anmelde til Datatilsynet, kan der henvises til tilsynets informationstekst herom, se venligst følgende link: https://www.datatilsynet.dk/blanketter/hvornaar-skal-forskningsprojekter-anmeldes-til-datatilsynet/

Datatilsynet anser hermed sagen for afsluttet og foretager sig ikke yderligere i anledning af din henvendelse.

Med venlig hilsen

Rasmus Jakobsen
Fuldmægtig, cand.jur.

Tlf.: (+45) 33 19 32 15
E-mail: rmj@datatilsynet.dk

English translation of reply from the Danish Data Protection Agency

To Maria Vang

By e-mail of 8 February 2018 you have contacted the Danish Data Protection Agency.

In the Personal Data Act, a general obligation to notify processing of personal data to the Data Inspectorate was established on the basis of Directive 95/46 / EC. In the preparation of the Personal Data Regulation, the European Union (EU) has concluded that this obligation led to an administrative and financial burden which did not in all cases contribute to the improvement of personal data protection. Such an arbitrary and general obligation to report projects is therefore abolished per May 25, 2018 and replaced by effective procedures and mechanisms that instead focus on the types of data-processing activities that are likely to involve a high risk of persons' rights and freedoms by virtue of their nature, scope, coherence and purpose. The notification scheme is replaced by the nature of the personal data regulation 30, which states that each data controller must keep records of treatment activities under his responsibility, where appropriate. In this connection, the Data Inspectorate may refer to the Supervisory Guide on Listing: https://www.datatilsynet.dk/fileadmin/user_upload/dokuments/Vejledninger/Vejledning_om_fortegnelse__endelig___DOK461184_.PDF.

It follows from the guide that the listing requirement supersedes the previously applicable notification system.

The answer to your question therefore depends on whether your processing of personal data begins before or after 25 May 2018. If the treatment is commenced before, a notification must be made to the Danish Data Protection Agency. If treatment is initiated after, no notification shall be given to the supervision, see above. If you must report to the Data Inspectorate, please refer to the supervisory information text on this, please see the following link: https://www.datatilsynet.dk/blanketter/hvornaar-skal-forskningsprojekter-anmeldes-til-datatilsynet/

The Data Inspectorate hereby considers the case closed and does not proceed further on the occasion of your inquiry.

Yours sincerely

Rasmus Jakobsen

Associate Professor, Master of Arts.

Tel: (+45) 33 19 32 15

E-mail: rmj@datatilsynet.dk

Appendix 5: Peer-reveiwed publications produced during the ph.d.-period

1. Vallières, F., Hyland, P., Murphy, J., Hansen, M., Shevlin, M., Elklit, A., Ceannt, R., Armour, C., Wiedemann, N., Munk, M., Dinesen, C., O'Hare, G., Cunningham, T., Askerod, D., Spitz, P., Blackwell, N., McCarthy, A., O"Dowd, L., Shirley, S., Reid, T., Mokake, A., Halpin, R., Perera, C., Gleeson, C., Frost, R., Flanagan, N., Aldamman, K., Tamrakar, T., **Vang, M.L.**, Sherwood, L., Travers, Á., Haahr-Pedersen, I., Walshe, C., McDonagh, T. & Bramsen, R.H. (2018). Training the next generation of psychotraumatologists: COllaborative Network for Training and EXcellence in psychoTraumatology (CONTEXT), *European Journal of Psychotraumatology*, *9*(1), 1421001.

EUROPEAN JOURNAL OF PSYCHOTRAUMATOLOGY, 2018
VOL. 9, 1421001
https://doi.org/10.1080/20008198.2017.1421001

Taylor & Francis
Taylor & Francis Group

BASIC RESEARCH ARTICLE

OPEN ACCESS Check for updates

Training the next generation of psychotraumatologists: COllaborative Network for Training and EXcellence in psychoTraumatology (CONTEXT)

Frédérique Vallières[a], Philip Hyland[a,b], Jamie Murphy[c], Maj Hansen[d], Mark Shevlin[c], Ask Elklit[d], Ruth Ceannt[a], Cherie Armour[c], Nana Wiedemann[e], Mette Munk[e], Cecilie Dinesen[e], Geraldine O'Hare[f], Twylla Cunningham[f], Ditte Askerod[g], Pernille Spitz[g], Noeline Blackwell[h], Angela McCarthy[h], Leonie O'Dowd[h], Shirley Scott[h], Tracey Reid[i], Andreas Mokake[j], Rory Halpin[j], Camila Perera[a,e], Christina Gleeson[c,j], Rachel Frost[c,h], Natalie Flanagan[d,j], Kinan Aldamman[a,e], Trina Tamrakar[d,i], Maria Louison Vang[c,g], Larissa Sherwood[a,i], Áine Travers[d,f], Ida Haahr-Pedersen[a,g], Catherine Walshe[c,h], Tracey McDonagh[d,f] and Rikke Holm Bramsen[d]

[a]Centre for Global Health, School of Psychology, Trinity College Dublin, Dublin, Ireland; [b]National College of Ireland, Dublin, Ireland; [c]Department of Psychology, Psychology Research Institute, Ulster University, Northern Ireland; [d]Department of Psychology, University of Southern Denmark, Odense, Denmark; [e]International Federation of the Red Cross Centre for Psychosocial Support hosted by Danish Red Cross, Copenhagen, Denmark; [f]Probation Board of Northern Ireland, Belfast, Northern Ireland; [g]Danish Children's Centres, Odense, Denmark; [h]Dublin Rape Crisis Centre, Dublin, Ireland; [i]Police Service of Northern Ireland, Belfast, Northern Ireland; [j]Spirasi, Dublin, Ireland

ABSTRACT

In this paper we present a description of the Horizon2020, Marie Skłodowska-Curie Action funded, research and training programme CONTEXT: COllaborative Network for Training and EXcellence in psychoTraumatology. The three objectives of the programme are put forward, each of which refers to a key component of the CONTEXT programme. First, we summarize the 12 individual research projects that will take place across three priority populations: (i) refugees and asylum seekers, (ii) first responders, and (iii) perpetrators and survivors of childhood and gender-based violence. Second, we detail the mentoring and training programme central to CONTEXT. Finally, we describe how the research, together with the training, will contribute towards better policy, guidelines, and practice within the field of psychotraumatology.

ARTICLE HISTORY
Received 17 October 2017
Accepted 14 December 2017

KEYWORDS
Trauma; doctoral programmes; refugees and asylum seekers; first responders; gender-based violence; childhood trauma

PALABRAS CLAVE
trauma; programas de

2. Christie, H., Talmon A., Schäfer S. K., de Haan A., **Vang, M.L**., Gilbar, O., Alisic, E. & Brown, E. (2018). The Transition to Parenthood Following a History of Childhood Maltreatment: A Review of the Literature on Prospective and New Parents' Experiences. *European Journal of Psychotraumatology (8), suppl. 7*

EUROPEAN JOURNAL OF PSYCHOTRAUMATOLOGY
2017, VOL. 8, 1492834
https://doi.org/10.1080/20008198.2018.1492834

EUROPEAN JOURNAL OF PSYCHO-TRAUMATOLOGY

REVIEW ARTICLE

OPEN ACCESS Check for updates

The transition to parenthood following a history of childhood maltreatment: a review of the literature on prospective and new parents' experiences

Hope Christie [a], Anat Talmon [b], Sarah Katharina Schäfer [c], Anke de Haan [d], Maria Louison Vang [e], Katharina Haag [a], Ohad Gilbar [f], Eva Alisic [g,h] and Erin Brown [i]

[a]Department of Psychology, University of Bath, Bath, UK; [b]The Bob Shapell School of Social Work, Tel Aviv University, Tel Aviv, Israel; [c]Department of Clinical Psychology and Psychotherapy, Saarland University, Saarbrücken, Germany; [d]Department of Psychology – Child and Adolescent Health Psychology, University of Zurich, Zurich, Switzerland; [e]School of Psychology, Ulster University, Coleraine, UK; [f]School of Social Work, Bar-Ilan University, Ramat Gan, Israel; [g]Accident Research Centre, Monash University, Melbourne, Australia; [h]Melbourne School of Population and Global Health, University of Melbourne, Melbourne, Australia; [i]School of Psychology, University of Queensland, St Lucia, Australia

ABSTRACT

Background: Becoming a parent is viewed as one of the most important transitions in one's life. However, a history of childhood maltreatment may affect the adjustment to parenthood.
Objective: The objective of this review was to synthesize the current evidence base to further our understanding of prospective and new parents' experiences in the transition to parenthood (pregnancy to 2 years post-birth), in the context of having a childhood maltreatment history.
Method: A scoping review of the literature was conducted using the following online databases: PubMed, PsycINFO, PsycNET, and Published International Literature of Traumatic Stress.
Results: The findings were synthesized into a four-component theoretical framework, which included mental health of the parent, physical changes, parental view of the child, and view of the self as a parent. A total of 69 papers, including 181,537 participants (of whom 30,482 mothers and 235 fathers had maltreatment histories), investigated the transition to parenthood. The majority of the studies showed that parents with a maltreatment history may suffer from a range of mental health problems during the transition to parenthood, experience more negative physical changes, and have more negative views of their child (or children). However, they reported both positive and negative experiences regarding their identity as a parent.
Conclusions: The findings suggest that maltreatment is a risk factor for a more challenging transition to parenthood. Experiences of fathers with maltreatment histories merit more attention, as do those of parents in low- and middle-income countries. Future directions should include predictors of positive experiences and the development of early interventions to improve outcomes for this population.

ARTICLE HISTORY
Received 29 August 2017
Accepted 6 June 2018

KEYWORDS
Adverse childhood experiences; childhood abuse; fatherhood; motherhood; parenting; pregnancy

PALABRAS CLAVES
Experiencias infantiles adversas; maltrato infantil; paternidad; maternidad; crianza; embarazo

关键词
不良儿童经历; 童年虐待; 父亲; 母亲; 为人父母; 怀孕

HIGHLIGHTS
- This study reviewed 69 papers to further understand the experiences

3. **Vang, M. L.,** Shevlin, M., Karatzias, T., Fyvie, C., & Hyland, P. (2018). Dissociation fully mediates the relationship between childhood sexual and emotional abuse and DSM-5 PTSD in a sample of treatment-seeking adults. *European Journal of Trauma & Dissociation, 2*(4), 173-178.

European Journal of Trauma & Dissociation 2 (2018) 173–178

Available online at ScienceDirect www.sciencedirect.com

Elsevier Masson France EM|consulte www.em-consulte.com

Research Paper

Dissociation fully mediates the relationship between childhood sexual and emotional abuse and DSM-5 PTSD in a sample of treatment-seeking adults

Maria Louison Vang [a,*], Mark Shevlin [a], Thanos Karatzias [b,c], Claire Fyvie [c], Philip Hyland [d]

[a] *Psychology Research Institute, Ulster University, Derry, United Kingdom*
[b] *Edinburgh Napier University, School of Health & Social Care, Edinburgh, United Kingdom*
[c] *Rivers Centre for Traumatic Stress, NHS Lothian, Edinburgh, United Kingdom*
[d] *School of Business, National College of Ireland, Dublin, Ireland, United Kingdom*

ARTICLE INFO

Article history:
Received 6 November 2017
Received in revised form 8 February 2018
Accepted 8 February 2018

Keywords:
Childhood abuse
Childhood trauma
Dissociation
Posttraumatic stress disorder
Posttraumatic stress

ABSTRACT

Introduction. – Child abuse and neglect are associated with increased risk of adult PTSD and dissociation. Recent research suggests that dissociation mediates the relationship between child maltreatment and PTSD, however, there is a lack of clarity regarding the mediating role of dissociation for different types of child abuse.
Objective. – The aim of the current study was to investigate dissociation as a mediator between 5 typologies of child maltreatment and posttraumatic stress severity.
Method. – In a sample of highly symptomatic, treatment-seeking females ($n = 99$), structural equation modelling was used to test 3 different models of mediation: direct effect, indirect effect, and direct and indirect effect.
Results. – The 5 typologies of child maltreatment were significantly related to dissociation and posttraumatic stress. Dissociation mediated the effect of childhood sexual abuse and childhood emotional abuse on posttraumatic stress severity. The indirect effect model fit the data best.
Conclusion. – Dissociation fully mediated the relationship between childhood sexual and emotional abuse and posttraumatic stress severity. The results are limited by the use of retrospective self-report measures and a small sample size.

4. **Vang, M.L.**, Andersen, A.H., Hendricks, O., Handberg, G., Illes, Z. & Roessler, K. K. (2018) Patient-centeredness in the 21st century: Instrumentalization or improved communication? *European Journal for Patient-Centred Health Care*, *7*(2), 325-333.

European Journal for Person Centered Healthcare 2019 Vol 7 Issue 2 pp 325-333

ARTICLE

Patient-centeredness in the 21st century: Instrumentalisation or improved communication?

Maria Louison Vang MSc[a], Aida Hougaard Andersen MSc[b], Oliver Hendricks MD PhD[c], Gitte Handberg MD[d], Zsolt Illes MD PhD DSc[e], Kirsten Kaya Roessler MSc PhD Dr.phil[f]

a Doctoral Researcher, Department of Psychology, University of Southern Denmark, Odense, Denmark
b PhD Fellow, Department of Psychology, University of Southern Denmark, Odense, Denmark
c Associate Professor & Chief Consultant, Christian X's Hospital for Rheumatic Diseases, Graasteen, Denmark
d Associate Professor & Chief Consultant, Pain Clinic, University Hospital Odense, Denmark
e Professor, Department of Neurology, University Hospital Odense, Denmark
f Professor, Department of Psychology, University of Southern Denmark, Odense, Denmark

Abstract

Objective: The objective of the current study was to investigate the contemporary concept of patient-centeredness compared to the original notion of patient-centeredness in practice and politics.

Methods: This is accomplished through a concept-analysis of patient-centeredness on the basis of the original publications by Michael and Enid Balint as well as policy documents regarding patient-centeredness in the Danish healthcare system in the period 2014-2016. A case study was conducted on patient-centeredness in the Danish healthcare system using interviews with doctor and patient before and after the consultation and video observation of the consultation. The interviews and observations were transcribed and analysed using a framework derived from Pragmatics of Human Communication.

Results: Substantial differences between the original patient-centeredness and contemporary patient-centeredness were identified. Both types of patient-centeredness were practised. However, contemporary patient-centeredness was only realised in the patient performing the doctor's role-obligations of prescribing and monitoring treatment, resulting in a breakdown of the doctor-patient relationship that was only restored by the doctor's practice of original patient-centeredness.

Conclusion: Contemporary patient-centeredness over-emphasises content aspects of the doctor-patient encounter in favour of relationship aspects. Original patient-centeredness emphasises the relationship aspects of the encounter and support addressing existential concerns that might have important implications for treatment.

5. **Vang, M. L.**, Gleeson, C., Hansen, M. & Shevlin, M. (2019). Covariates of burnout and secondary traumatisation in professionals working with child-survivors of trauma: A research synthesis. *British Journal of Social Work*

British Journal of Social Work (2019) **0**, 1–21
doi: 10.1093/bjsw/bcz117

Covariates of Burnout and Secondary Traumatisation in Professionals Working with Child Survivors of Trauma: A Research Synthesis

Maria L. Vang[1,2,3,*], Christina Gleeson[1,3], Maj Hansen[2,3] and Mark Shevlin[1,3,4]

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[2]*ThRIVE, Department of Psychology, University of Southern Denmark, Odense, Denmark*
[3]*The Collaborative Network for Training and Excellence in Psychotraumatology (CONTEXT) (www.psychotraumanetwork.com)*
[4]*School of Psychology and Psychology Research Institute, Ulster University, Coleraine, Northern Ireland*

*Correspondence to Maria L. Vang, School of Psychology, Ulster University, Coleraine BT52 1SA, Northern Ireland. E-mail: *m.vang@ulster.ac.uk*

Abstract

It has been demonstrated that working with trauma-exposed children increases the risk for developing secondary traumatisation (ST) and burnout (BO). High correlations between ST and BO have been reported, suggesting an empirical overlap between the constructs. The purpose of the present review was to synthesise research investigating covariates of BO and ST to explore whether this overlap extends to covariates. Seven research databases were searched for studies investigating covariates of both BO and ST. Identified studies were screened in accordance with predefined inclusion and exclusion criteria, resulting in thirteen articles being included for further review. Fourteen covariates were examined in two or more of the included studies and were synthesised according to the 'levels of evidence approach'. Some individual and operational factors appeared to be equally related to BO and ST. There was a predominance of equivocal evidence for and against the salience of different covariates as well as an over-representation of demographic factors compared to organisational and operational factors in the current literature. More research investigating the nature of the overlap between BO and ST is needed, and future research would benefit from integrating covariates supported in the work and organisational literature with covariates from the psychotraumatological literature.

Keywords: burnout, child protection, secondary traumatisation, systematic review

6. Frost, R., **Vang, M.L.**, Karatzias, T., Murphy, J., & Shevlin, M. (2019). The distribution of Psychotic, ICD-11 PTSD and Complex PTSD symptoms among a trauma-exposed UK general population sample. *Psychosis*, *11*(3), 187-198.

PSYCHOSIS
https://doi.org/10.1080/17522439.2019.1626472

The distribution of psychosis, ICD-11 PTSD and complex PTSD symptoms among a trauma-exposed UK general population sample

Rachel Frost[a], Maria Louison Vang[a], Thanos Karatzias[b], Philip Hyland[c] and Mark Shevlin[a]

[a]School of Psychology, Ulster University, Coleraine Campus, Northern Ireland; [b]Department of Psychology, Edinburgh Napier University, Edinburgh, UK; [c]School of Health & Social Care, National University of Ireland Maynooth, Republic of Ireland

ABSTRACT

Background: Co-occurrence of psychosis and posttraumatic stress disorder (PTSD) symptoms has been demonstrated, but the ICD-11 marks a significant divergence in the formulation of PTSD with a focus on the core symptoms and the addition of complex PTSD (CPTSD).
Objective: To evaluate the distribution of psychosis and traumatic stress symptoms using the ICD-11 conceptualisation of PTSD and CPTSD.
Method: A latent class analysis was conducted on psychosis symptoms, PTSD and CPTSD among a random adult sample from the UK general population with a history of traumatic events (N = 1,051).
Results: Six classes were identified; a low-symptom class, a PTSD-class, a CPTSD-class, a class characterized by disturbances in self-organization alone as well as two classes characterized by CPTSD and various levels of psychosis symptom endorsement. Cumulative childhood adversity predicted membership of the PTSD, CPTSD and comorbid classes in a dose-response manner with the strongest effects observed for classes characterised by comorbid symptoms.
Conclusion: The present study confirms the co-occurrence of psychosis symptoms and ICD-11 PTSD and CPTSD. Psychosis symptoms did not emerge in isolation from traumatic stress symptoms, underpinning the need for a greater recognition of psychosis symptoms as part of the broader clinical picture among trauma-exposed populations.

ARTICLE HISTORY
Received 21 March 2019
Accepted 29 May 2019

KEYWORDS
Complex PTSD; PTSD; psychosis; childhood trauma

7. **Vang, M.L.**, Ben-Ezra, M. & Shevlin, M. (2019). Modelling patterns of poly-victimization in the Israeli population and the association with PTSD and Complex PTSD. *Journal of Traumatic Stress*, special issue on ICD-11 CPTSD. DOI: 10.1002/jts.22455. [Epub ahead of print]

Journal of Traumatic Stress
xxxx 2019, *00*, 1–12

ISTSS International Society for Traumatic Stress Studies

Modeling Patterns of Polyvictimiztion and Their Associations with Posttraumatic Stress Disorder and Complex Posttraumatic Stress Disorder in the Israeli Population

Maria Louison Vang,[1,2,3,4] Menachem Ben-Ezra,[5] and Mark Shevlin[1,2]
[1]School of Psychology and Psychology Research Institute, Ulster University, Derry, United Kingdom
[2]The Collabortive Network for Training and Excellence in Psychotraumatology (CONTEXT), www.psychotraumanetwork.com
[3]The Danish Children Centres, Region Southern Denmark, Denmark
[4]University of Southern Denmark, Department of Psychology, Faculty of Life and Health Sciences, Odense, Denmark
[5]School of Social Work, Ariel University, Ariel, Israel

Although evidence is accumulating for the conceptual validity of the *ICD-11* proposal for posttraumatic stress disorder (PTSD) and complex PTSD (CPTSD), our understanding of the specificity of trauma-related predictors is still evolving. Specifically, studies utilizing advanced statistical methods to model the association between trauma exposure and *ICD-11* proposals of traumatic stress and differences in profiles of trauma exposure are lacking. Additionally, time since trauma and a clear memory of the trauma are yet to be examined as predictors of PTSD and CPTSD. We analyzed trauma exposure as reported by a general population sample of Israeli adults ($N = 834$), using latent class analysis, and the resultant classes were used in regression models to predict PTSD and CPTSD operationalized both dimensionally and categorically. Four distinct groups were identified: child and adult interpersonal victimization, community victimization–male, community victimization–female, and adult victimization. These groups were differentially related to PTSD and CPTSD, with only child and adult interpersonal victimization consistently predicting CPTSD and disturbances in self-organization. When modeled dimensionally, PTSD was associated with the child and adult interpersonal victimization and adult victimization groups, whereas only the child and adult interpersonal victimization group was predictive of PTSD when operationalized categorically. The roles of time since trauma and a clear memory of the trauma differed across PTSD and CPTSD. These findings support the use of trauma typologies for predicting PTSD and CPTSD and provide important insight into the distribution of trauma exposure in the Israeli population.

8. **Vang, M. L.,** Ali, S. A., Christiansen, D. M., Dokkedahl, S., & Elklit, A (2019). Measuring the Effect of an adapted version of the STEPS Program: Treatment of Posttraumatic Symptoms in Danish survivors of sexual assault. *European Journal of Psychotraumatology*

EUROPEAN JOURNAL OF PSYCHOTRAUMATOLOGY
2020, VOL. 11, 1701778
https://doi.org/10.1080/20008198.2019.1701778

PSYCHO-TRAUMATOLOGY

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BASIC RESEARCH ARTICLE

OPEN ACCESS Check for updates

The role of age and mode of delivery in the STEPS intervention: a longitudinal pilot-study in treatment of posttraumatic stress symptoms in Danish survivors of sexual assault

M. Louison Vang [a,b,c], S. A. Ali[c], D. M. Christiansen [c], S. Dokkedahl[c] and A. Elklit[c]

[a]School of Psychology, Ulster University, Northern Ireland, UK; [b]The Collaborative Network for Training and Excellence in Psychotraumatology (CONTEXT); [c]National Center for Psychotraumatology, Department of Psychology, University of Southern Denmark, Odense, Denmark

ABSTRACT

Background: The STEPS programme has been succesfully implemented as a group-based treatment of trauma symptoms after rape for adolescents. The STEPS intervention was translated from Dutch to Danish and offered to adults in addition to adolescents as well as an individual intervention in addition to a group-based intervention at a Danish Centre for Rape Victims through 2011 to 2014. The programme was translated from Dutch to Danish and expanded to adults in addition to adolescents as well as to an individual intervention in addition to a group-based intervention at a Danish Centre for Rape Victims through 2011 to 2014.

Objective: The present study observes development in trauma symptoms and ICD-11 diagnostic status during an adapted version of the intervention programme 'STEPS' for survivors of sexual assault.

Methods: A prospective uncontrolled study was conducted, monitoring symptoms of posttraumatic stress and other trauma-related symptomatology before treatment, after treatment and at 6 and 12 months' follow up for 103 referrals receiving individual or group-based STEPS. Tentative diagnoses of posttraumatic stress disorder (PTSD) and complex PTSD were assigned to participants according to the ICD-11 to observe the development in diagnostic status across time, and multilevel modelling was used to assess the development of symptom severity and to assess the moderating effect of age-group and mode of delivery.

Results: A loglinear function representing large and statistically significant decline in symptomatology over time provided the best fit for all measures of trauma-related symptomatology. The decline was not moderated by age-group or mode of intervention. Dropout rates were independent of mode of intervention and age.

Conclusion: The adaption of the STEPS programme to adults and as an individual intervention is feasible and maintains effect sizes comparable to those observed in the original intervention. Further research using randomized controlled trials is needed to ascribe the observed effect to the STEPS programme.

ARTICLE HISTORY
Received 12 April 2019
Revised 22 October 2019
Accepted 11 November 2019

KEYWORDS
Sexual assault; rape; PTSD; CPTSD; ICD-11; treatment; Intervention; STEPS

PALABRAS CLAVE
Abuso sexual; violación; TEPT; TEPT complejo; CIE-11; Tratamiento; Intervención; STEPS

关键词
性侵犯; 强奸; 创伤后应激障碍; 复杂性PTSD; ICD-11; 治疗; 干预措施; STEPS

HIGHLIGHTS

- The STEPS intervention is feasible for adult survivors and individual treatment in addition to adolescents and group-based treatment.
- Observed ICD-11 CPTSD-caseness decreases over time in referrals receiving

9. **Vang, M.L.**, Jørgensen, S., Auning-Hansen, M. & Elklit, A. (2019). Testing the validity of PTSD and Complex PTSD among refugees in treatment. *Torture*

Testing the validity of ICD-11 PTSD and CPTSD among refugees in treatment using latent class analysis

Maria Louison Vang*, Sabrina Brødsgaard Nielsen, Mikkel Auning-Hansen***, Ask Elklit*****

Key points of interest

- The ICD-11 proposal for PTSD and CPTSD is supported in a culturally heterogenous sample referred for treatment at a Danish facility.
- The majority of referrals qualified for a diagnosis of CPTSD, suggesting that more comprehensive treatment paradigms than those offered for PTSD alone is required for this population.

Abstract

Introduction: The WHO has proposed posttraumatic stress (PTSD) and Complex PTSD (CPTSD) as trauma-related 'sibling' disorders in ICD-11. The proposal has received support from research among clinical and community samples alike but only a few studies have tested the validity of these disorders in a sample of refugees using the International Trauma Questionnaire especially designed for assessment of ICD-11 PTSD and CPTSD.

Methods: Latent class analysis was used to test the validity of the ICD-11 PTSD and CPTSD distinction in a heterogeneous group of 284 highly symptomatic refugees registered for treatment at a Danish treatment center.

Results: A two-class solution fit the data best. One group reported elevated levels of PTSD-symptoms and symptoms of affective dysregulation, and one group reported elevated levels of symptoms corresponding to CPTSD. The CPTSD group was considerably larger than the PTSD-group.

Discussion: The current study supports the ICD-11 distinction between PTSD and CPTSD in a sample of treatment-seeking refugees. The assistance of interpreters was needed for some of the participants which affected the reliability of the assessment.

Conclusion: The ICD-11 proposal for PTSD and CPTSD is supported in a heterogenous sample of refugees using the ITQ.

Keywords: PTSD, Complex PTSD, refugee, ICD-11, International Trauma Questionnaire

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https://doi.org/10.7146/torture.v29i3.115367

10. **Vang, M.L.,** Shevlin, M., Hansen, M. Askerod, D.K.K., Lund, L., & Flanagan, N. (accepted). Secondary traumatisation, burnout and functional impairment among child protection workers: Findings from a Danish survey. European Journal of Psychotraumatology, special issue on CONTEXT.

EUROPEAN JOURNAL OF PSYCHOTRAUMATOLOGY
2020, VOL. 00, 1724416
https://doi.org/10.1080/20008198.2020.1724416

Secondary traumatisation, burn-out and functional impairment: findings from a study of Danish child protection workers

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ABSTRACT

Background: Child-protection workers are at elevated risk for secondary traumatization. However, research in the area of secondary traumatization has been hampered by two major obstacles: the use of measures that have unclear or inadequate psychometric properties and equivocal findings on the degree of associated functional impairment.

Objective: To assess the relationship between secondary traumatization and burnout using exploratory structural equation modelling (ESEM) and to assess the relationship between secondary traumatization and functional impairment.

Methods: A survey of Danish child-protection workers was conducted through the Danish Children Centres (N = 667). Secondary traumatization was measured using the Professional Quality of Life-5 (ProQoL-5) and burnout using the Oldenburg Burnout Inventory.

Results: A three-factor ESEM model provided the best fit to the data, reflecting factors consistent with the structure of secondary traumatization and burnout. The factors were differentially related to trauma-related and organizational variables in ways consistent with existing evidence. All factors were significantly related to functional impairment.

Conclusion: The findings supported the discriminant validity of secondary traumatization and burnout while highlighting methodological issues around the current use of sum-score approaches to investigating secondary traumatization. The current study supported the clinical relevance of secondary traumatization by linking it explicitly to social and cognitive functional impairment.

ARTICLE HISTORY
Received 30 August 2019
Revised 11 January 2020
Accepted 22 January 2020

KEYWORDS
Secondary traumatization; burnout; child protection; child welfare; exploratory structural equation modelling; discriminant validity; functional impairment

PALABRAS CLAVE
traumatización secundaria; agotamientoprotección infantil; asistencia social infantil; modelación exploratoria de ecuaciones estructurales; validez discriminante; deterioro funcional; ESEM

11. Charak, R., **Vang, M.L.,** Hyland, P., Karatzias, T. & Shevlin, M. (accepted). Lifetime interpersonal victimization profiles and mental health problems in a nationally representative panel of trauma-exposed adults from the United Kingdom. Journal of Traumatic Stress

Abstract

Exposure to traumatic events has been associated with negative psychological outcomes; however, there is a dearth of research on revictimization, that is, experiences of victimization during both childhood and adulthood. The current study examined different patterns of lifetime interpersonal victimization based on six types of childhood maltreatment, and physical and sexual assault, and assault with a weapon during adulthood, via latent class analysis (LCA) with gender as covariate. Using a 3-step approach the study assessed differences across the latent classes in symptoms and diagnosis of depression, anxiety, and DSM-5 posttraumatic stress disorder. An adult sample of 1,051 in the age range of 18-90 (*M* = 47.18 years; *SD* = 15.00, 68.4% females) were recruited online through a research panel, representative of the United Kingdom population with exposure to trauma LCA identified five classes, namely, lifetime polyvictimization (8.3%; 69.5% female), sexual revictimization (13.7%; 96.5% female), physical revictimization (12.5%; 1.5% male), childhood trauma (25.9%; 85.6% female), and limited victimization (39.7%; 40.3% female). The lifetime polyvictimization class had elevated scores in anxiety, depression, and posttraumatic stress symptoms, followed by the childhood trauma class compared to the other classes. The lifetime polyvictimization class had nearly a 9 to 33-fold increase in risk of a diagnosis of depression, anxiety and PTSD, compared to the limited victimization class. Findings facilitate in the identification of individuals at risk for revictimization, and that evidence based clinical interventions should be targeted towards those with exposure to revictimization and childhood trauma to alleviate symptoms of posttraumatic stress, depression, and anxiety.

Keywords: childhood trauma; polyvictimization; revictimization; depression, anxiety, posttraumatic stress disorder; Latent class analysis

Appendix 6: Oral conference presentations during the ph.d. period

Vang, M.L. & Lund, L. (2020) Mapping and preventing secondary traumatisation among Danish child protection workers. Oral presentation given at the 35th Chadwick Conference, San Diego, USA.

Vang, M.L., Hansen, M., Lund, L., Askerod, D. & Shevlin, M. (2019). Organisational and operational risk factors of burnout and secondary traumatisation in a sample of Danish Child protection workers. Oral presentation given at the European Society for Traumatic Stress Studies 16th conference, Rotterdam, The Netherlands.

Vang, M.L. (2020) Are employees in harms way when working with survivors of child abuse? Oral presentation accepted at the 5th National Centre for Psychotraumatology Conference, Odense, Denmark.

Vang, M.L. (2018, November): Secondary traumatisation and burn-out in the Danish Children Centres: Preliminary results from an online survey. Oral Presentation given at The National Children Centre Conference 2018. Middelfart, Denmark.

Appendix 7: Conference poster presentations during the ph.d. period

1. **Vang, M.L.**, Pihl-Thingvad, J. & Shevlin, M. (2020, January) Screening for secondary traumatisation among Danish child protection workers: A latent variable approach. Poster presented at the 1st National Network Meeting for Trauma Researchers in Denmark, Odense, Denmark.

Screening for secondary traumatization among Danish child protection workers: A latent variable approach

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CONTEXT

Background

Secondary traumatisation (ST) refers to an occupational risk characterised by symptoms akin to posttraumatic stress among professional working with survivors of trauma. Although the concept has garnered increasing interest in Denmark, no measures for screening is available in Danish and hitherto, no large-scale studies have attempted to assess the occurrence of ST among Danish professionals.

Objective

The purpose of the current study was to translate and validate a measure of secondary traumatisation in a Danish context and to estimate the occurrence of ST among Danish child protection workers.

Participants

Participants were 670 employees recruited from Danish municipalities, Danish police districts and the Danish Children Centres working with vulnerable children and cases of suspected child abuse. Participation rates were highest for the Danish Children Centres (100%) and lowest for the municipalities (42%).

Measures and methods

The Professional Quality of Life scale (ProQoL-5) was translated to Danish using a committee approach and translate-back-translate approach. The measure was distributed in an online survey, and items were considered endorsed at scores of ≥ 3 ('Sometimes'). Data was analysed using latent class analysis. Classes were validated in a regression analysis using sum scores of anxiety, depression, general well-being and scores on ProQol-5.

Table 1: Fit statistics from the latent class analysis

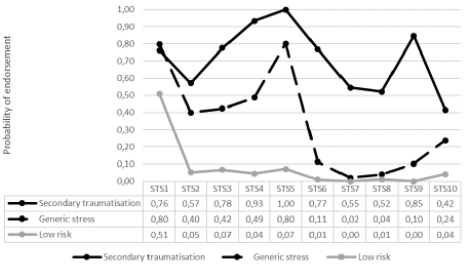
Model	-2LL	X2 (df)	AIC	BIC	ssaBIC	Entropy	LMRT	BSLRT
1	-2589.632	1870.952 (991)	5199.264	5244.337	5212.586	-	-	-
2	-2248.024	1475.798 (997)	4538.049	4632.702	4566.025	0.851	673.802 (0.0000)	683.215 (0.0000)
3	-2196.086	644.259 (989)	4456.171	4600.404	4498.802	0.832	102.447 (0.0002)	103.878 (0.0000)
4	-2182.814	615.415 (979)	4451.628	4645.441	4508.913	0.867	26.177 (0.0316)	26.543 (0.0300)
5	-2170.202	479.751 (967)	4448.404	4448.404	4520.343	0.858	24.877 (0.1324)	25.225 (0.1579)
6	-2161.646	429.479 (957)	4453.291	4746.265	4539.885	0.876	16.876 (0.1762)	17.112 (0.5000)

Note: -2LL: - 2 times the loglikelihood. AIC: Akaike Information Criterion. BIC: Bayesian Information Criterion. ssaBIC: Sample-size adjusted BIC. LMRT: Lo-Mendel-Rubin adjusted LRT-test. BSLRT: Parametric bootstrapped likelihood-ratio test.

Results

Figure 1 displays the results of the latent class analysis.. A small group of child protection workers (4 %) were at risk for ST as identified by their unique response pattern on the ProQoL-5.

Figure 1: The 3-class latent class solution



	STS1	STS2	STS3	STS4	STS5	STS6	STS7	STS8	STS9	STS10
Secondary traumatisation	0,76	0,57	0,78	0,93	1,00	0,77	0,55	0,52	0,85	0,42
Generic stress	0,80	0,40	0,42	0,49	0,80	0,11	0,02	0,04	0,10	0,24
Low risk	0,51	0,05	0,07	0,04	0,07	0,01	0,00	0,01	0,00	0,04

Table 2 displays results from the multivariate regression.

Table 2: Relationship between class-membership and mental health status

	PHQ9	GAD7	WHO5	OLBI Exh.	OLBI Disen.	STS	tSTS	Cog. FI	Soc. FI
Secondary traumatisation (4%)[1]	10.22 (1.15)	9.69 (.81)[2,3]	33.85 (3.21)[3]	3.08 (.08)[2,3]	2.76 (.10)[2,3]	31.23 (.80)[2,3]	77.41 (1.68)[1,3]	7.95 (.94)[3]	8.69 (1.11)[2,3]
Generic stress (24 %)[2]	8.91 (.37)[3]	6.74 (.35)[1,3]	41.86 (2.26)[3]	2.79 (.04)[1,3]	2.43 (.04)[1,3]	21.64 (.28)[1,3]	59.18 (.52)[1,3]	6.62 (.32)[3]	6.28 (.31)[1,3]
Low risk (72 %)[3]	3.05 (.18)[1,2]	1.98 (.13)[1,2]	65.11 (1.35)[1,2]	2.27 (.02)[1,2]	2.09 (.02)[1,2]	14.21 (.12)[1,2]	45.05 (.23)[1,2]	1.79 (.23)[1,2]	1.22 (.16)[1,2]

Note: Values are M (SE). Superscript numbers indicate classes that differ significantly from each other at p <.05. PHQ9: Depression, 10 = cut-off for moderate severity. GAD7: Anxiety, 10 = moderate severity. WHO-5: General well-being, 35 = cut-off for suspected stress-related disorder or depression. OLBI: Burnout dimensions. Exh: Exhaustion. Disen.: Disengagement. STS: Sum score on ProQoL-5. tSTS: Test-score on ProQoL-5. 57 = cutoff for high risk for STS. Cog.: Cognitice. Soc: Social. FI: Functional Impairment.

Discussion

This study found that a minority of Danish child protection workers were at risk for ST, and results from the latent class analysis indicates that a revised scoring procedure for ProQoL-5 may be useful to screen employees at risk for ST. Existing scoring procedures described in the ProQoL-5 manual (Stamm, 2010) confounds ST with generic stress which is unwarranted based on variation in their association with distress and functional impairment. The Danish version of the ProQoL-5 is freely available online (Rassing et al., 2018). For further information on the revised scoring procedure, please contact Maria L. Vang.

References

Stamm, B.H. (2010). The concise ProQOL manual. Retrieved from: https://proqol.org/ProQol_Test.html
Rassing, S. Bagge, N., Pihl-Thingvad, J. Skjerning, H., Dahl, , S. & Vang, M.L. (2018). The ProQoL-5 Danish Translation. Freely available from: https://proqol.org/ProQol_Test.html

The Collaborative Network for Training and Excellence in psychoTraumatology (CONTEXT) has received funding from the European Union's Horizon 2020 research and innovation programme, under the Marie Skłodowska-Curie grant agreement No 722523.

2. **Vang, M.L.,** Ali, S.A., Christiansen, D.M., Dokkedahl, S.B. & Elklit, A. (2020). Application of the STEPS intervention in Denmark: Findings from an observational study of PTSD symptoms in survivors of rape. Poster presented at the 1st National Network Meeting for Trauma Researchers in Denmark, Odense, Denmark.

Application of the STEPS-intervention in Denmark: Findings from an observational study of PTSD symptoms in survivors of rape

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CONTEXT

Background

Survivors of sexual assault are at high risk for developing mental health problems[1]. Previous research has documented that participation in STEPS, a Dutch group-based cognitive-behavioural treatment programme for adolescent survivors of sexual assault, is associated with a decrease in trauma-related symptomatology[2], and knowledge is lacking on the application of the programme for adults and in individual therapy.

Objective

To translate and test the applicability of STEPS in a Danish treatment facility for survivors of sexual assault and to study the symptom development during and after delivery of the STEPS programme to adults and adolescents and in group and individual treatment.

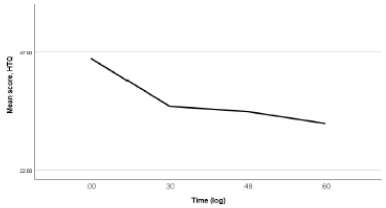
Participants

Participants were referred for treatment following a single sexual assault and assessed before treatment (T1, n=96), after treatment (T2, n= 62), 6 months after treatment (T3, n = 51) and one year after treatment (T4, n = 44).

Measures

Symptoms of posttraumatic stress was assessed using sum-scores on the HTQ, sum-scores on the TSC and sum-scores on the sub-scales of the TSC including negative affectivity, somatisation, and dissociation. A provisional measure of ICD-11 diagnostic status of PTSD and CPTSD was computed and development in endorsement of diagnostic criteria was observed throughout the study period.

Figure 1: Symptom development for HTQ sum-scores



Methods

Multilevel modelling nesting measurement points within individuals were used to study symptom development.

Results

A logarithmic function of best described the symptom development over time for all outcomes. The steepest decline in symptomatology was observed between pre- and post-treatment measures. There was a statistically significant reduction in all measures of trauma-related symptomatology as illustrated in figure 1. Age-group (adult/adolescent) and intervention type (group/individual) did not moderate the symptom development. As shown in table 1, most participants endorsed a diagnosis of CPTSD before treatment and at T4, most participants did not endorse a symptoms consistent with a diagnosis.

Table 1: Probable endorsement of ICD-11 diagnoses

Diagnosis	T1 (n=82)	T2 (n=61)	T3 (n=50)	T4 (n=41)
No diagnosis	14.6 % (n=12)	36.1 % (n=22)	40 % (n=20)	57.1 % (n=24)
PTSD	12.2 % (n=10)	29.5 % (n=18)	26 % (n=13)	23.8 % (n=10)
CPTSD	73.2 % (n=60)	34.4 % (n=21)	34 % (n=17)	19 % (n=8)

Note: Diagnostic codes could not be assigned to all participants due to missing data. Percentages reported are valid percentages.

Discussion

The findings from this study supported the feasibility of the STEPS programme in a population of Danish survivors of sexual abuse and suggested that the intervention could be delivered to adults and as an individual treatment in addition to its' original format without affecting the symptom development over time. This is the first study to observe ICD-11 diagnostic status over time during intervention and findings suggest that STEPS may be effective in addressing symptoms of CPTSD. Future research using controlled designs are needed to ascribe symptom development to features of the STEPS programme.

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[2]Bicanic, I., De Roos, C., Van Wesel, F., Sinnema, G. & Van de Putte, E. (2014) Rape-related symptoms in adolescents: short- and long-term outcome after cognitive behavior group therapy. *European Journal of Psychotraumatology*, 5(1), 22969.

The Collaborative Network for Training and Excellence in psychoTraumatology (CONTEXT) has received funding from the European Union's Horizon 2020 research and innovation programme, under the Marie Skłodowska-Curie grant agreement No 722523.

3. **Vang, M. L.**, Shevlin, M., Karatzias, T., Ben-Ezra, M., & Hyland, P. (2019, June). The Structure of Adjustment Disorder, PTSD and Complex PTSD, and their Association with Childhood Adversities, Stressors and Traumas. Poster presented at the 16th European Society for Traumatic Stress Studies Conference, Rotterdam, The Netherlands.

Ulster University

The Structure of Adjustment Disorder, PTSD, and Complex PTSD, and their association with childhood adversities, stressors, and traumas

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CONTEXT

Background

Adjustment Disorder (AdjD), Post-Traumatic Stress Disorder (PTSD) and Complex Post-Traumatic Stress Disorder (CPTSD) comprise part of the diagnostic cluster "Disorders Specifically Associated with Stress" (DSAS) introduced in the recently published ICD-11. The diagnoses are designed to reflect a continuum of severity in stressor-related reactions (Stein, Rouillon & Maercker, 2018), but so far, no studies have examined the distinctiveness of the disorders or their association with adversity, stressors and potentially traumatizing experiences.

Objective

The present study tested five different latent structures of the DSAS constructs using confirmatory factor analysis (CFA) and proceeded to test the relationship of the best-fitting model to childhood adversities as well as adulthood stressors and potentially traumatizing experiences using SEM-based regression analysis.

Participants

Participants were 331 patients referred for treatment at the NHS Trauma Centre in Edinburgh. The mean age of the sample was 39 years (SD = 12.46), 62.1 % were females (62.1%) and 92.5 % of the participants were born in the United Kingdom. 41.4% were employed and approximately one third of the participants were living alone (32.9%).

Figure 1: Alternative models 1-4 of latent structure of DSAS

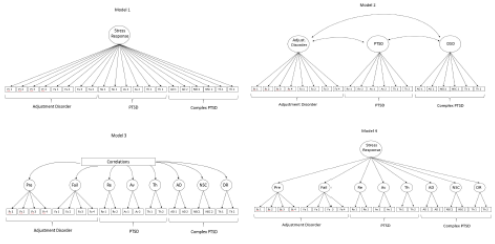
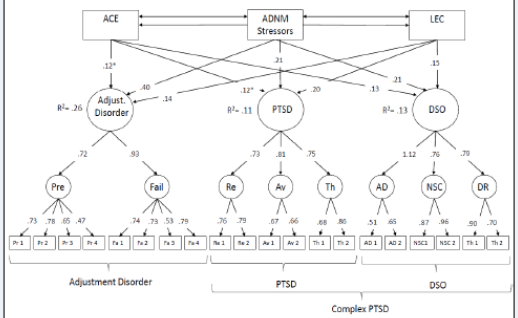


Figure 2: Results from the structural equation model of DSAS disorders and child- and adulthood stress (Model 5)



Note: Pr: Preoccupation, Fa: Failure to Adapt, Operationalized using the Adjustment Disorder – New Module. Re: Re-experiencing, Av: Avoidance, Th: Sense of Threat. AD: Affective Dysregulation, NSC: Negative Self-Concept, DR: Disrubed Relationships. DSO: Disordered Self-Organizaiton, Operationalised using the International Trauma Questionnaire. ACE: Adverse Childhood Experiences, 10 items. ADMN Stressors: Adjustment Disorder New Module Stressors, 16 items: 6 acute, 10 persistent stressors. LEC: Life Events Checklist-5, 17 items operationalising potentially traumatizing experiences. Coefficients marked with * are statistically nonsignificant at the level p < .05. Fit statistics for the baseline model: χ^2= 313.96, df=159, p >.05; RMSEA= .054, 90% CI = .046 - .063; CFI=.911; TLI=.894; SRMR = .062.

Results

Model 3 and 5 provided the best fit to the data with Model 5 displaying the lowest BIC-value and therefore being the preferred model. Figure 1 displays the final SEM-model of ICD-11 DSAS disorders. The model displayed fitted the data well (χ^2= 377.59, df=210, p >.05; RMSEA= .049, 90% CI = .041 - .057; CFI=.915; TLI=.898; SRMR = .058). Out of the sample, 70.6 % met the diagnostic criteria for AjD 64.8% for CPTSD and 12.7 % for PTSD. Of those who met the diagnostic criteria for AjD, 72.1% met the criteria for CPTSD and 11.2% for PTSD. Due to the ICD-11 diagnostic algorithm, this means that 11.8% of the total sample presented with probable AdjD.

Discussion

Although there is a high degree of comorbidity across AdjD, PTSD and CPTSD, their symptom profiles were found to be unique and distinct. Advesity in childhood was only related to CPTSD, whereas stressors and traumatic life events were significantly associated with all three conditions. A high degree of comorbidity was observed, particularly in relation to AdjD and CPTSD which is consistent with all disorders reflecting an internalizing dimension of psychopathology. Conclusively, evidence from the current study supports the ICD-11 conceptualization of AdjD, PTSD and CPTSD.

Stein, D. J., Rouillon, F., & Maercker, A. (2018). New perspectives on adjustment disorder. *World Journal of Biological Psychiatry. 2018;19(sup1):* S1-S2.

The Collaborative Network for Training and Excellence in psychoTraumatology (CONTEXT) has received funding from the European Union's Horizon 2020 research and innovation programme, under the Marie Skłodowska-Curie grant agreement No 722523.

4. **Vang, M. L.**, Shevlin, M., Karatzias, T., Murphy, J., & Frost, R. (2019, June). A Latent Class Approach to Modelling the Continuum of PTSD, Complex PTSD and Psychosis. Poster presented at the 16th European Society for Traumatic Stress Studies Conference, Rotterdam, The Netherlands.

Ulster University

A latent class approach to modelling the continuum of PTSD, Complex PTSD and psychosis

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CONTEXT

Background

The co-occurrence of symptoms of posttraumatic stress and psychotic-like experiences is well-established (Achim et al., 2009; Shevlin et al., 2011). Theoretical propositions and empirical evidence have underlined similarities in their phenomenology and aetiology with some researchers conceptualising PTSD and psychosis as similar entities on a spectrum of reactions to trauma (Morrison, Frame, & Larkin, 2003).

Objective

The purpose of the current study was to address a gap in the literature by exploring the relationship between symptoms of trauma and psychotic-like experiences under the ICD-11 conceptualisation of traumatic stress-reactions.

Participants

Participants were 1,051 persons from an online research panel randomly recruited to be representative of the UK adult population. All were born in the UK and screened positive for at least one traumatic event in their lifetime. Mean age was 47.2 years (SD: 15, range:18-90 years) and 68.4 % was female.

Measures

ICD-11 posttraumatic stress was operationalised using the International Trauma Questionnaire (Cloitre et al., 2018). Symptom-clusters were considered present when any items had been endorsed at ≥2 ('Moderately', range 0-4). Psychotic-like experiences were operationalised using a modified version of the APSS (Kelleher et al., 2011). A psychotic-like experience was considered endorsed when frequency was ≥2 ('Sometimes') and distress was rated ≥2 ('A bit distressed) on a scale of 1-4.

Table 1: Fit statistics from the latent class analysis

Classes	Log-likelihood	AIC	BIC	ssaBIC	LRT (p)	Entropy
1	-6645.803	13317	13382	13340	-	-
2	-5265.824	10585	10719	10633	2731.911 (0.0000)	0.890
3	-4851.397	9784	9988	9857	820.431 (0.0000)	0.891
4	-4768.612	9647	9919	9745	163.887 (0.0000)	0.847
5	-4695.963	9529	9871	9652	143.823 (0.0006)	0.860
6	**-4631.989**	**9429**	**9841**	**9577**	**126.646 (0.0001)**	**0.822**
7	-4585.642*	9365	9846	9538	91.753 (0.0108)	0.836
8	-4563.067*	9348	9898	9545	44.690 (0.1908)	0.846

Note. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ssaBIC = sample size adjusted Bayesian Information Criterion; LRT = Lo-Mendell-Rubin adjusted likelihood ratio test. Best fitting LCA model in bold. * = The best log-likelihood value was not replicated. The p-value may not be trustworthy due to local maxima.

Methods

A latent class analysis was undertaken on symptoms of PTSD, CPTSD and psychotic-like experiences. Logistic regression was used to assess the relationship between cumulative childhood trauma-exposure and class-membership.

Results

Figure 1: The 6-class latent class solution

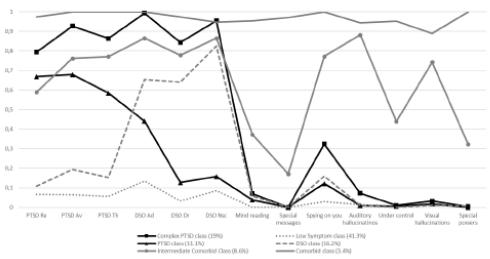

Table 2: Odds ratio from the logistic regression

Trauma count	Class 1: CPTSD OR (95% CI)	Class 3: PTSD OR (95% CI)	Class 4: DSO OR (95% CI)	Class 5: Intermediate OR (95% CI)	Class 6: Comorbid OR (95% CI)
None	Ref	Ref	Ref	Ref	Ref
One	2.78 (1.62 – 4.79)*	1.43 (0.78 – 2.62)	1.49 (0.89 – 2.51)	1.89 (0.83 – 4.30)	4.00 (0.87 – 18.33)
Two	4.86 (2.76 – 8.57)*	2.49 (1.32 – 4.69)*	2.39 (1.37 – 4.16)*	4.42 (2.04 – 9.56)*	5.77 (1.19 – 27.92)*
Three	7.58 (4.10 – 14.01)*	3.05 (1.51 – 6.17)*	3.44 (1.86 – 6.36)*	6.65 (2.96 – 14.93)*	11.71 (2.85 – 48.14)*
Four or more	10.69 (5.03 – 22.69)*	3.41 (1.38 – 8.41)*	2.51 (1.03 – 6.09)*	15.34 (6.31 – 37.25)*	24.74 (5.90 – 103.77)*

Note. The 'low symptom' class was set as the baseline category; None; zero childhood traumas was set as the reference trauma category; covariates controlled for in this model included age, total adult trauma, sex (female), urban status, relationship status, migration status, employment, education level, and cannabis use. * $p < 0.05$. Childhood trauma exposure was measured by the ACE.

Discussion

This study is the first to extend evidence for the co-occurrence of symptoms of psychosis and PTSD to include ICD-11 CPTSD. No profile was identified that was characterized by psychotic-like experiences separate from posttraumatic symptomatology. More research is needed testing the replicability of this finding in a cohort of patients with a primary diagnosis of a schizophrenia spectrum disorders.

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5. **Vang, M.L**. Shevlin, M., Karatzias, T., Fyvie, C., & Hyland, P. (2018, February). Modelling dissociation as a mediator between childhood adversity and PTSD in female treatment-seeking adults. Poster presented at the 10th UKPTS Conference, Edinburgh, Scotland.

Ulster University

Modelling dissociation as a mediator between childhood adversity and PTSD in female treatment-seeking adults

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CONTEXT

Introduction

Child abuse and neglect (hereafter "childhood adversity") has been consistently shown to predict and increase susceptibility to post-traumatic stress disorder (PTSD) and pathological dissociation. Additionally, treatment-resistance is frequently reported among adult survivors of childhood adversity with dissociation suggested as an underlying mechanism for poor responses to treatment (Sar, 2015).

Recent research showed that dissociation mediates the relationship between childhood physical and sexual abuse combined and adult PTSD (Kratzer et al., 2017), but there is a lack of research investigating dissociation as a mediator for different types of childhood adversity.

Purpose

The current study tested three different models of dissociation as a mediator between 5 different types of childhood adversity and adult PTSD in a sample of treatment-seeking female trauma-survivors.

Methods and Participants

Participants were 99 females referred for trauma-therapy to a National Health Service trauma centre in Scotland through a consecutive period of 12 months. The mean age was 38.96 years (SD = 10.78) and the majority was of British origin (90.6 %). Assessment was self-report carried out before treatment. Measures used for the current study include:

The Childhood Trauma Questionnaire (CTQ) that assesses exposure to childhood emotional abuse (EA), physical abuse (PA), sexual abuse (SA), emotional neglect (EN), and physical neglect (PN).

The Dissociative Symptoms Scale-Brief (DSS-8) that assesses moderately severe dissociation.

The Posttraumatic Checklist for DSM-5 (PCL-5) that assesses DSM-5 PTSD symptom-clusters. PTSD was modelled as a continuous latent variable (posttraumatic stress severity, PTSS) indicated by PCL-5.

The model tested included direct effects (c) of childhood adversity, indirect effects (a,b); and direct and indirect effects combined (a,b,c).

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Results

88 % of the participants had a history of childhood adversity and 94.9 % exceeded a cut-off of 33 on PCL-5, indicating possible PTSD (mean=56.58, SD=13.51). The mean score on DSS-8 (1.53, SD=.83) indicated a high prevalence of dissociative symptomatology. All correlations between the study-variables were significant. Fit-statistics indicated that the indirect model (paths a, b) fit the data best.

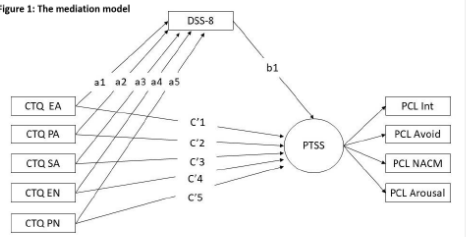
Table 1. Model fit statistics for the alternative models of childhood trauma, dissociation, and posttraumatic stress.

Models	χ^2	*df*	P	CFI	TLI	RMSEA (90% CI)	SRMR	BIC
1: Direct only	98.916	26	.000	.731	.638	.168 (.134 - .204)	.178	2677.052
2: Indirect only	42.058	25	.018	.937	.912	.083 (.035 - .126)	.072	2630.965
3: Direct and indirect	33.440	20	.030	.950	.913	.082 (.026 - .130)	.035	2644.373

Note: χ^2 = Chi-square Goodness of Fit statistic; *df* = degrees of freedom; p = probability; CFI = Comparative Fit Index; TLI = Tucker Lewis Index; RMSEA (90% CI) = Root-Mean-Square Error of Approximation with 90% confidence intervals; SRMR = Standardized Root Mean Square Residual; BIC = Bayesian Information Criterion;

Dissociation mediated the relationship between SA (β= 0.256), EA (β=0.441); and adult PTSD-symptomatology. The mediated effect of CPA, CEN and CPN was statistically insignificant.

Figure 1: The mediation model



Note: EA=Emotional Abuse, PA=Physical Abuse, SA=Sexual Abuse, EN=Emotional Neglect, PN=Physical Neglect, DSS-8= Total Dissociative Symptoms Scale- Brief scores, Int = Intrusion, Avoid=Avoidance, NACM= Negative alterations in cognition and mood.

Conclusion

The current study indicate that dissociation might be a worthwhile therapeutic target in adults with PTSD following exposure to child maltreatment, particularly SA and EA. Furthermore, it adds to the evidence by suggesting that adult mental health outcomes is insufficiently modelled if ascribed to childhood adversity alone, supporting precautions against overemphasising child maltreatment when investigating causes for mental health problems in adulthood (Finkelhor, 2017).

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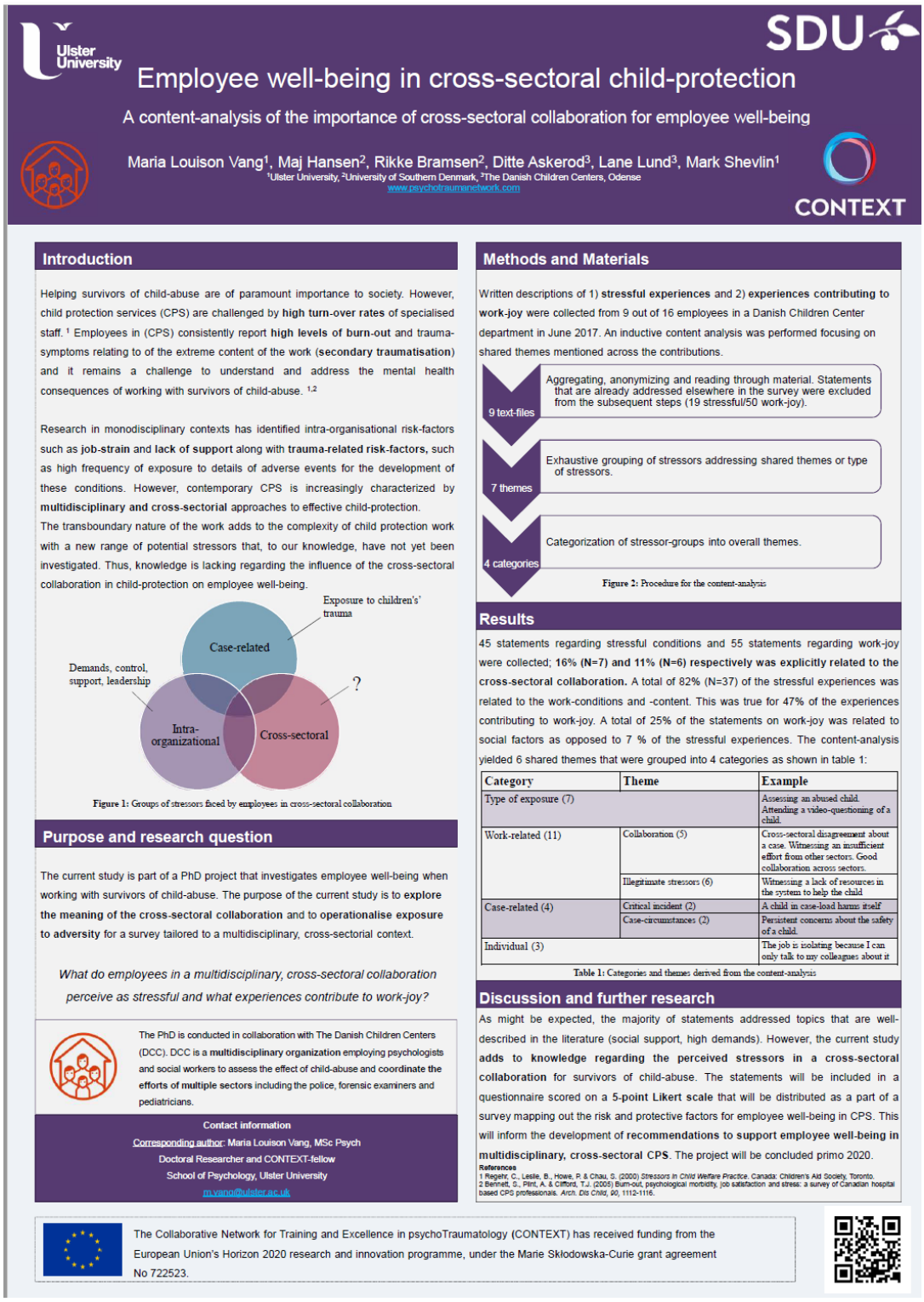
6. **Vang, M.L.**, Hansen, M., Bramsen, R.H., Askerod, D., Lund, L., and Shevlin, M. (2017, October). Employee well-being in cross-sectoral child-protection - Operationalising the importance of cross-sectoral and multidisciplinary collaboration for employee well-being. Poster presented at the 15th ISPCAN European Regional Conference on Child Abuse & Neglect, The Hague, The Netherlands.



Employee well-being in cross-sectoral child-protection

A content-analysis of the importance of cross-sectoral collaboration for employee well-being

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CONTEXT

Introduction

Helping survivors of child-abuse are of paramount importance to society. However, child protection services (CPS) are challenged by **high turn-over rates** of specialised staff. [1] Employees in (CPS) consistently report **high levels of burn-out** and trauma-symptoms relating to of the extreme content of the work (**secondary traumatisation**) and it remains a challenge to understand and address the mental health consequences of working with survivors of child-abuse. [1,2]

Research in monodisciplinary contexts has identified intra-organisational risk-factors such as **job-strain** and **lack of support** along with **trauma-related risk-factors**, such as high frequency of exposure to details of adverse events for the development of these conditions. However, contemporary CPS is increasingly characterized by **multidisciplinary and cross-sectorial** approaches to effective child-protection.

The transboundary nature of the work adds to the complexity of child protection work with a new range of potential stressors that, to our knowledge, have not yet been investigated. Thus, knowledge is lacking regarding the influence of the cross-sectoral collaboration in child-protection on employee well-being.

Figure 1: Groups of stressors faced by employees in cross-sectoral collaboration

Purpose and research question

The current study is part of a PhD project that investigates employee well-being when working with survivors of child-abuse. The purpose of the current study is to **explore the meaning of the cross-sectoral collaboration** and to **operationalise exposure to adversity** for a survey tailored to a multidisciplinary, cross-sectorial context.

What do employees in a multidisciplinary, cross-sectoral collaboration perceive as stressful and what experiences contribute to work-joy?

The PhD is conducted in collaboration with The Danish Children Centers (DCC). DCC is a **multidisciplinary organization** employing psychologists and social workers to assess the effect of child-abuse and **coordinate the efforts of multiple sectors** including the police, forensic examiners and pediatricians.

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Methods and Materials

Written descriptions of 1) **stressful experiences** and 2) **experiences contributing to work-joy** were collected from 9 out of 16 employees in a Danish Children Center department in June 2017. An inductive content analysis was performed focusing on shared themes mentioned across the contributions.

Figure 2: Procedure for the content-analysis

Results

45 statements regarding stressful conditions and 55 statements regarding work-joy were collected; **16% (N=7) and 11% (N=6) respectively was explicitly related to the cross-sectoral collaboration.** A total of 82% (N=37) of the stressful experiences was related to the work-conditions and -content. This was true for 47% of the experiences contributing to work-joy. A total of 25% of the statements on work-joy was related to social factors as opposed to 7 % of the stressful experiences. The content-analysis yielded 6 shared themes that were grouped into 4 categories as shown in table 1:

Category	Theme	Example
Type of exposure (7)		Assessing an abused child. Attending a video-questioning of a child.
Work-related (11)	Collaboration (5)	Cross-sectoral disagreement about a case. Witnessing an insufficient effort from other sectors. Good collaboration across sectors.
	Illegitimate stressors (6)	Witnessing a lack of resources in the system to help the child
Case-related (4)	Critical incident (2)	A child in case-load harms itself
	Case-circumstances (2)	Persistent concerns about the safety of a child.
Individual (3)		The job is isolating because I can only talk to my colleagues about it

Table 1: Categories and themes derived from the content-analysis

Discussion and further research

As might be expected, the majority of statements addressed topics that are well-described in the literature (social support, high demands). However, the current study **adds to knowledge regarding the perceived stressors in a cross-sectoral collaboration** for survivors of child-abuse. The statements will be included in a questionnaire scored on a **5-point Likert scale** that will be distributed as a part of a survey mapping out the risk and protective factors for employee well-being in CPS. This will inform the development of **recommendations to support employee well-being in multidisciplinary, cross-sectoral CPS**. The project will be concluded primo 2020.

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7. **Vang, M.L.**, Hendricks, O., & Roessler, K.K. (2017, September) Patient-centeredness in the 21st century: Instrumentalization or improved communication? Poster presented at the 8th Annual Translational Medicine Conference in Derry/Londonderry, United Kingdom.

Patient-centeredness in the 21st century: Improved communication or instrumentalisation?

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Introduction

Patient-centeredness is regarded as best ethical practice of medicine, and it is increasingly implemented in Western health-care systems to improve decision-making and patient outcomes. The term stems from the psychoanalytical tradition:

1) Placing central emphasis on the patient as a unique person and his unconscious and unexpressed needs,
2) Deeming the doctor-patient relationship a curative factor, and
3) Focusing on the patients subjective experience of disease.

Within contemporary politics however, patient-centeredness is increasingly practiced to improve doctor-patient relationships, treatment-outcomes, patient adherence and patient satisfaction. Hereby, patient-centeredness becomes first and foremost a health-political concept practised as a means to an end, moving away from the original idea of a healing relationship.

Aims

The purpose of the study was twofold:

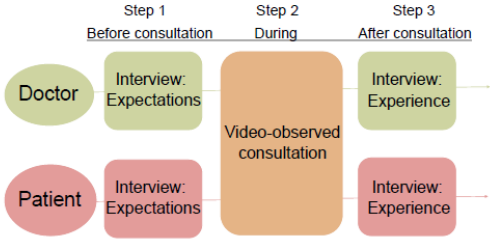
1) Clarifying the differences between the original notion of patient-centeredness (Balint, 1969) and the contemporary notion of patient-centeredness represented by policy-papers from the Danish Government regarding patient-centeredness in the Danish health-care system in 2014-2016.

2) Investigating the practical performance of patient-centeredness in the Danish health-care system for patients suffering from chronic diseases.

Materials and methods

A year-long fieldwork including 56 observations and 24 interviews at three hospital departments was undertaken as the basis of this project. A concept-analysis of patient-centeredness informed a qualitative case-study at the Christian X' Hospital for Rheumatic Diseases. A doctor-patient interaction regarding the treatment of chronic arthritis with a patient using illicit medical cannabis-oil was video-observed. Triangulation of the observation was performed by interviewing the doctor and the patient separately before and after the encounter. The observation and interviews were transcribed and analysed using the theoretical framework of Watzlawick, Beavin & Jackson: The pragmatics of human communication.

Figure 1: Outline of the data-collection procedure



Results

Contemporary patient-centeredness emphasises conscious and *cognitive* deliberation of patient needs, idealising a patient who can participate in a discussion of his needs and preferences. The original notion of patient-centeredness emphasised the *therapeutic relationship* between the doctor and the patient, underlining the doctor's deliberation of the patient's *unconscious* needs and anxiety as bearing central importance to the success of the encounter.

Table 1: Differences between original and contemporary patient-centeredness

	Original patient-centeredness	Contemporary patient-centeredness
Core values	Patient-as-person, Doctor-as-person	Patient autonomy, shared power and responsibilities
Primary focus	The doctor's responsibilities: Responding to patient's unexpressed needs	The patient's responsibilities: Express expectations, wants and needs.
	The relationship between doctor and patient	The content of the conversation between doctor and patient
Relationship-characteristics	Complementary relationship, Doctor superior to patient in power	Symmetrical relationship, Power equally distributed
Level of consciousness	Emphasizes the subconscious and its' implications for our interpersonal interactions	Emphasizes cognitive and conscious deliberations as the primary basis for interaction and decision-making

Discussion

Both original and contemporary patient-centeredness are performed in the doctor-patient encounter. The realisation of contemporary patient-centeredness is only achieved by the patient usurping the doctor's task of prescribing and monitoring treatment, thereby disintegrating the doctor's role and leaving out the unique possibilities of an encounter of two human beings with different role expectations and concerns. In short; making the formation of an interpersonal relationship impossible.

The pronounced focus on cognitive, conscious decision-making in contemporary patient-centeredness neglects subconscious needs that cannot be verbalized, but are always present in human interaction, thus essentially precluding the encounter of the doctor and patient as persons. This in effect risks a break-down of the therapeutic relationship that is at the core of the beneficial effects of patient-centeredness.

Take home message

The overall purpose of patient-centeredness is to enhance the quality of care. In doing so, we must recognize that human relationships are an expression of more than individual cognitions or expectations, and that they sometimes call for a necessary obscurity regarding the needs or expectations that one hopes to have met, precisely in order to enable their fulfilment. When both doctor and patient are regarded as a unique human beings including unexpressed needs and wants, this aids the formation of the therapeutic relationship.

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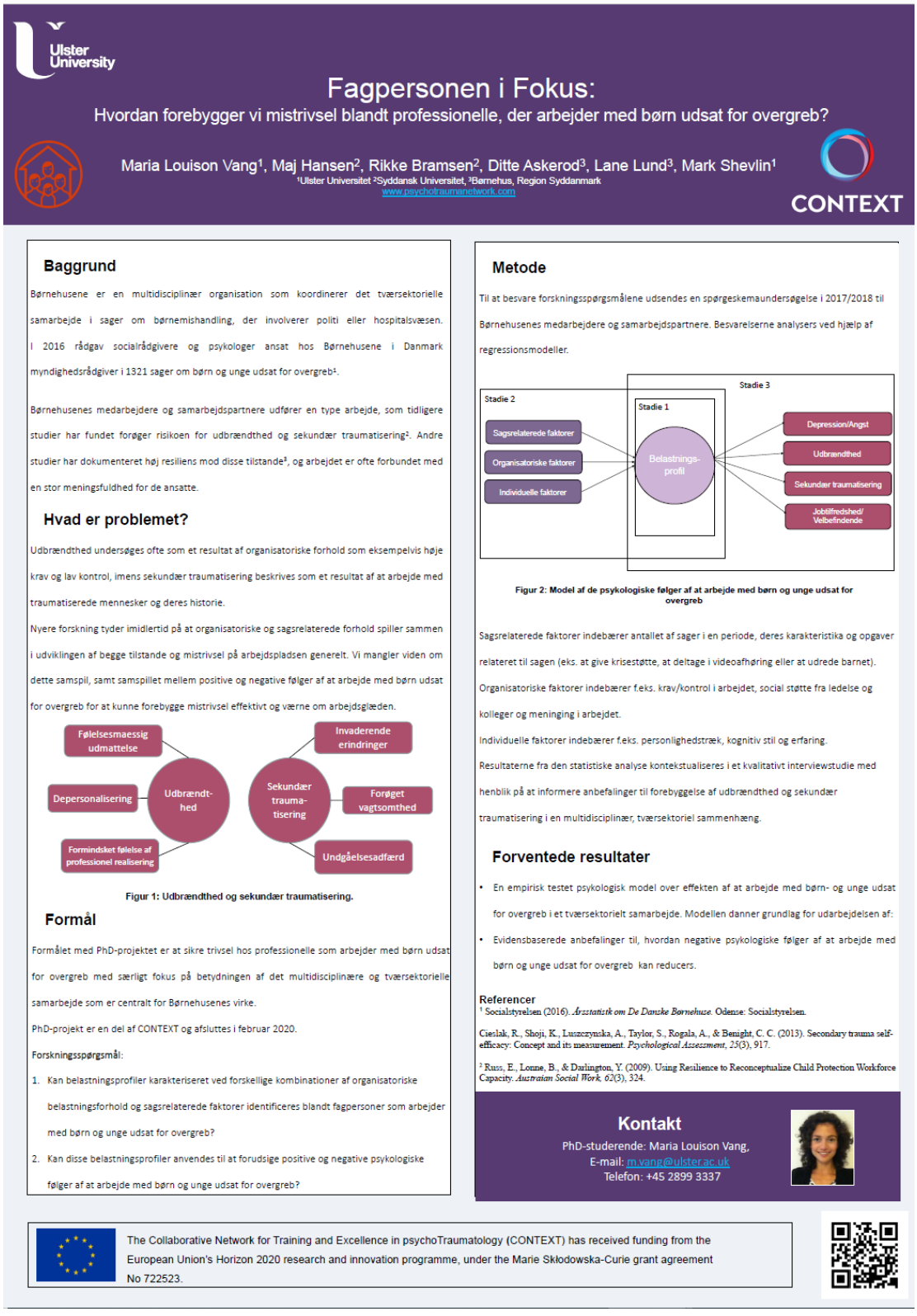
8. **Vang, M.L.**, Hansen, M., Bramsen, R.H., Askerod, D., Lund, L. & Shevlin, M. (2017, September). The professionals in focus: How do we prevent negative mental health effects amongst professionals working with survivors of child-abuse? Poster presented at the 8th Hindsgavl Conference of The Research Network against Child Abuse, Middelfart, Denmark.



Ulster University

Fagpersonen i Fokus:

Hvordan forebygger vi mistrivsel blandt professionelle, der arbejder med børn udsat for overgreb?

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CONTEXT

Baggrund

Børnehusene er en multidisciplinær organisation som koordinerer det tværsektorielle samarbejde i sager om børnemishandling, der involverer politi eller hospitalsvæsen. I 2016 rådgav socialrådgivere og psykologer ansat hos Børnehusene i Danmark myndighedsrådgiver i 1321 sager om børn og unge udsat for overgreb[1].

Børnehusenes medarbejdere og samarbejdspartnere udfører en type arbejde, som tidligere studier har fundet forøger risikoen for udbrændthed og sekundær traumatisering[2]. Andre studier har dokumenteret høj resiliens mod disse tilstande[3], og arbejdet er ofte forbundet med en stor meningsfuldhed for de ansatte.

Hvad er problemet?

Udbrændthed undersøges ofte som et resultat af organisatoriske forhold som eksempelvis høje krav og lav kontrol, imens sekundær traumatisering beskrives som et resultat af at arbejde med traumatiserede mennesker og deres historie.

Nyere forskning tyder imidlertid på at organisatoriske og sagsrelaterede forhold spiller sammen i udviklingen af begge tilstande og mistrivsel på arbejdspladsen generelt. Vi mangler viden om dette samspil, samt samspillet mellem positive og negative følger af at arbejde med børn udsat for overgreb for at kunne forebygge mistrivsel effektivt og værne om arbejdsglæden.

Figur 1: Udbrændthed og sekundær traumatisering.

Formål

Formålet med PhD-projektet er at sikre trivsel hos professionelle som arbejder med børn udsat for overgreb med særligt fokus på betydningen af det multidisciplinære og tværsektorielle samarbejde som er centralt for Børnehusenes virke.

PhD-projekt er en del af CONTEXT og afsluttes i februar 2020.

Forskningsspørgsmål:

1. Kan belastningsprofiler karakteriseret ved forskellige kombinationer af organisatoriske belastningsforhold og sagsrelaterede faktorer identificeres blandt fagpersoner som arbejder med børn og unge udsat for overgreb?
2. Kan disse belastningsprofiler anvendes til at forudsige positive og negative psykologiske følger af at arbejde med børn og unge udsat for overgreb?

Metode

Til at besvare forskningsspørgsmålene udsendes en spørgeskemaundersøgelse i 2017/2018 til Børnehusenes medarbejdere og samarbejdspartnere. Besvarelserne analysers ved hjælp af regressionsmodeller.

Figur 2: Model af de psykologiske følger af at arbejde med børn og unge udsat for overgreb

Sagsrelaterede faktorer indebærer antallet af sager i en periode, deres karakteristika og opgaver relateret til sagen (eks. at give krisestøtte, at deltage i videoafhøring eller at udrede barnet).

Organisatoriske faktorer indebærer f.eks. krav/kontrol i arbejdet, social støtte fra ledelse og kolleger og meninging i arbejdet.

Individuelle faktorer indebærer f.eks. personlighedstræk, kognitiv stil og erfaring.

Resultaterne fra den statistiske analyse kontekstualiseres i et kvalitativt interviewstudie med henblik på at informere anbefalinger til forebyggelse af udbrændthed og sekundær traumatisering i en multidisciplinær, tværsektoriel sammenhæng.

Forventede resultater

- En empirisk testet psykologisk model over effekten af at arbejde med børn- og unge udsat for overgreb i et tværsektorielt samarbejde. Modellen danner grundlag for udarbejdelsen af:
- Evidensbaserede anbefalinger til, hvordan negative psykologiske følger af at arbejde med børn og unge udsat for overgreb kan reducers.

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The Collaborative Network for Training and Excellence in psychoTraumatology (CONTEXT) has received funding from the European Union's Horizon 2020 research and innovation programme, under the Marie Skłodowska-Curie grant agreement No 722523.

9. **Vang, M.L.**, Hansen, M., Bramsen, R.H., Askerod, D., Lund, L., and Shevlin, M. (2017, June). Helping the Helpers: Preventing secondary traumatisation and burn-out amongst professionals working with survivors of child-abuse. Poster presented at the The 15th European Society for Traumatic Stress Studies Conference, Odense, Denmark.

Helping the helpers

Preventing secondary traumatisation and burn-out among professionals working with survivors of child abuse

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CONTEXT

Background

The Danish Children Centers are a **multidisciplinary organization** employing psychologists and social workers. They assess the effect of child-abuse and coordinate the efforts of multiple sectors including the police, forensic examiners and pediatricians.

The risk of developing **burn-out and secondary traumatisation** is beyond question when working with survivors of child-abuse (Figley, 1995).

However, the relationship between trauma-related adversity, organizational factors and psychological outcomes is **unclear** with current research suggesting that organizational stressors and trauma-related factors interplay to produce negative psychological outcomes.

Research suggests that symptoms of secondary traumatization might be endured without clinically significant levels of distress (Elwood et al., 2011). Hence, distress related to organizational or trauma-related risk-factors might be a better predictor of the development of negative psychological outcomes than the occurrence of risk-factors per se.

Photo: www.colourbox.com

Objective

The overall objective of the current study is to **improve and ensure well-being** and working conditions for mental health professionals working with survivors of child-abuse in the Danish Children Centers.

Research Questions

1. Can specific staff-profiles be identified for employees working with survivors of child-abuse?
2. Do organizational and trauma-related risk-factors differentially predict association with different staff-profiles?
3. Do different staff-profiles differentially predict different positive and negative psychological outcomes?

Methodology

The present study employs a **sequential explanatory design** with the purpose of generating new and contextualized knowledge. This includes a quantitative and a qualitative sub-study respectively.

The quantitative study is a **survey** addressing RQ1-3 through mixture models, latent profile/class analysis and conditional process modelling. The qualitative sub-study will corroborate findings from the survey through interviews and participant-observation.

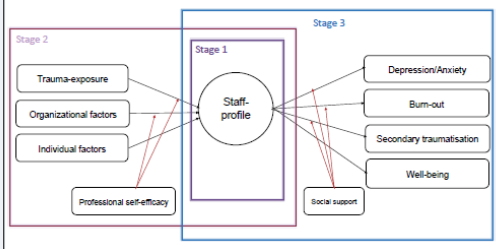

Figure 1: Proposed model of psychological impact of working with survivors of trauma

Stage 1: Latent profile/class analysis (LPA/LCA) models will be estimated to identify homogenous staff-profiles from continuous multivariate/categorical data.

Stage 2: Multinomial logistic regression will be used to assess the relationship between organizational factors, properties of trauma-exposure and individual factors on the one side and staff-profiles.

Stage 3: RQ3 will be investigated using logistic regression analysis.

Expected Outcomes

- **Psychological model** of the interplay between risk and protective factors for negative psychological consequences when working with survivors of child-abuse.
- Evidence-based strategies and specific **recommendations to prevent** negative psychological outcomes when working with survivors of child-abuse.

Ultimately, this knowledge can be used as a basis for enhancing well-being of staff working in multidisciplinary contexts with victims of trauma.

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The Collaborative Network for Training and Excellence in psychoTraumatology (CONTEXT) has received funding from the European Union's Horizon 2020 research and innovation programme, under the Marie Skłodowska-Curie grant agreement No 722523.

Appendix 8: Sectoral presentations during the ph.d.-period

Vang, M.L. (October, 2017). Mental Health in the Workplace: Individuals working with children exposed to trauma. Oral Presentation given for Ulster University's Annual World Mental Health Day. Derry, Northern Ireland.

Vang, M.L. (November, 2017) Secondary trauma and burn-out in professionals working with survivors of child-abuse: Introduction to a survey. Oral Presentation given at the Annual Theme-day for Social Workers. Middelfart, Denmark.

Vang, M.L. (May, 2018). Investigating Burn-out and secondary Traumatisation in Professionals working with Survivors of Child-abuse. Oral Presentation given at a workshop on new and ongoing Barnahus Research, The Nordic Network for Barnahus Research. Oslo, Norway.

Vang, M.L. (September, 2018). Occupational well-being among professional working with surviviors of child-abuse. Cross-sectoral theme day delivered at the Children Centre, Region of Middle Denmark, Aarhus, Denmark.

Vang, M.L. (September, 2018). Secondary traumatisation among psychologists: Theories and international findings. Oral presentation given at a District meeting for psychologists in the Region of Northern Denmark, Aalborg, Denmark.

Vang, M.L. (November, 2018): Secondary traumatisation and burn-out in the Danish Children Centres: Preliminary results from an online survey. Oral Presentation given at The National Children Centre Conference 2018. Middelfart, Denmark.

Vang, M.L. (January, 2019): Professional well-being, secondary traumatisation and burnout when working with traumatized children: Risk and protective factors. Oral presentation given in Copenhagen, Denmark.

Vang, M.L. (2019) Risk and secondary traumatisation and burnout in working in a psychiatric facility for children and adolescents. Theme day delivered at a regional psychiatric facility, Denmark.

Vang, M.L. (2019) Psychological SWAT: The art of thriving in an emotionally demanding work. Cross-sectoral theme-day delivered at a regional Children Centre.

Vang, M.L. (2019) Secondary traumatisation among psychologists working with survivors of trauma: theories and self-care strategies. Lecture delivered at the psychotraumatology specialist education for psychologists in Denmark.

Appendix 9: Other output during the ph.d. period

Vang, M.L. & Haahr-Pedersen, I. (2019). Secondary traumatisation in specialized child-protection work: The case of the Danish Children Centres. Mini-psychology schools in Global Psychotraumatology. Dublin, Ireland: Trinity College.

Christoffersen, M.N., Elklit, A. & **Vang, M.L.** (2019) Barnets tarv i loven om psykisk vold. Notat om definitioner, forekomst og afgrænsning. [The needs of the child in legislation on psychological violence: Brief on definition, prevalence and delineation of psychological violence] Policy brief for the Legal Committee, The Danish Parliament, Januar 2019.

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